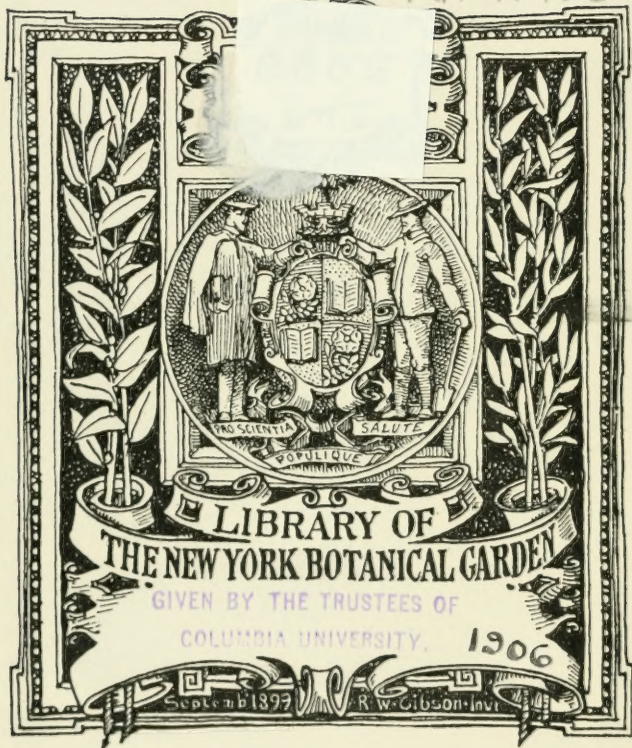
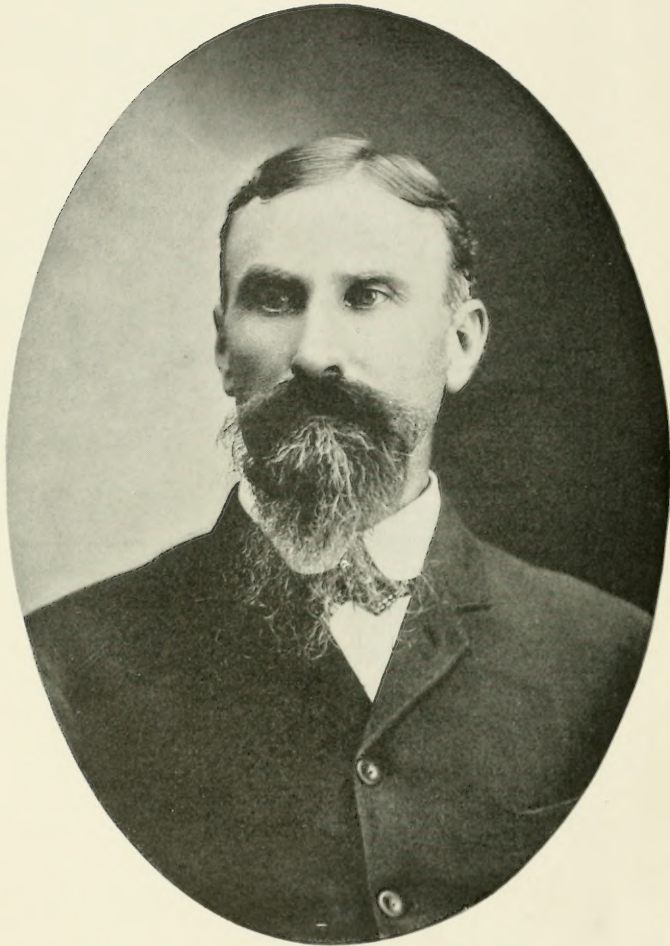


X.A. N 725





JOHN C. HAINES

FIFTY-FOURTH ANNUAL REPORT

OF THE

Indiana State Board of Agriculture

VOLUME XLVI—1904-05

INCLUDING THE

*Proceedings of the Annual Meeting 1905, Reports of County and District Societies,
State Meetings of Swine Breeders, Corn Growers' Association, Farmers'
Institutes, Experiment Station, Farmers' Mutual Insurance
Companies Union, State Dairy Association,
Cattle Breeders' Associations, Etc.*

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1905

THE STATE OF INDIANA, }
EXECUTIVE DEPARTMENT, }
INDIANAPOLIS, October 13, 1905. }

Received by the Governor, examined and referred to the Auditor of State for verification of the financial statement.

J. FRANK HANLY,
Governor.

OFFICE OF AUDITOR OF STATE, }
INDIANAPOLIS, October 21, 1905. }

The within report, so far as the same relates to moneys drawn from the State Treasury, viz.: \$10,000 named in the within statement, has been examined and found correct.

WARREN BIGLER,
Auditor of State.

October 21, 1905.

Returned by the Auditor of State, with above certificate, and transmitted to the Secretary of State for publication, upon the order of the Board of Commissioners of Public Printing and Binding.

Filed in the office of the Secretary of State of the State of Indiana, October 13, 1905.

DANIEL E. STORMS,
Secretary of State.

Received the within report and delivered to the printer this 21st day of October, 1905.

HARRY SLOUGH,
Clerk Printing Bureau.

State Lib.,
OCT 28 1906

INDIANA STATE BOARD OF AGRICULTURE.

INDIANAPOLIS, IND., October 10, 1905.

To His Excellency, J. FRANK HANLY, Governor of Indiana:

I beg to submit herewith the report of the proceedings of the Indiana State Board of Agriculture for the year 1904.

CHARLES DOWNING,

Secretary.

MEMBERS

OF THE

Indiana State Board of Agriculture

1904.

- 1st District—JOHN C. HAINES, Rockport, Spencer County.
2nd District—MASON J. NIBLACK, Vincennes, Knox County.
3rd District—E. S. TUELL, Corydon, Harrison County.
4th District—JOHN TILSON, Franklin, Johnson County.
5th District—H. L. NOWLIN, Lawrenceburg, Dearborn County.
6th District—KNODE PORTER, Hagerstown, Wayne County.
7th District—DAVID WALLACE, Indianapolis, Marion County.
8th District—SID CONGER, Shelbyville, Shelby County.
9th District—W. T. BEAUCHAMP, Terre Haute, Vigo County.
10th District—OSCAR HADLEY, Danville, Hendricks County.
11th District—M. S. CLAYPOOL, Muncie, Delaware County.
12th District—WM. M. BLACKSTOCK, Lafayette, Tippecanoe County.
13th District—JOHN L. THOMPSON, Gas City, Grant County.
14th District—JOE CUNNINGHAM, Peru, Miami County.
15th District—C. B. BENJAMIN, LeRoy, Lake County.
16th District—JAMES E. McDONALD, Ligonier, Noble County.
-

OFFICERS FOR 1904.

JOHN C. HAINES, *President.*

DAVID WALLACE,
Vice-President.

E. H. PEED,
General Superintendent.

CHARLES DOWNING,
Secretary.

J. W. LAGRANGE,
Treasurer.

Executive Committee.

MESSERS. NIBLACK, CONGER, WALLACE, BEAUCHAMP, CLAYPOOL.

State Industrial Associations.

OFFICERS FOR 1904.

Indiana State Board of Agriculture—President, John L. Thompson, Gas City; Secretary, Charles Downing, Indianapolis.

Indiana Horticultural Association—President, John Tilson, Franklin; Secretary, W. B. Flick, Lawrence.

Indiana Shorthorn Breeders' Association—President, E. W. Bowen, Delphi; Secretary, John G. Gartin, Burney.

Indiana Dairymen's Association—President—J. J. W. Billingsley, Indianapolis; Secretary, H. E. Van Norman, Lafayette.

Indiana Wool Growers' Association—President, J. L. Thompson, Gas City; Secretary, Howard H. Keim, Ladoga.

Indiana Swine Breeders' Association—President, F. P. Modlin, New Castle; Secretary, W. R. Midkiff, Shelbyville.

Indiana Poultry Breeders' Association—President, Frank Johnson, Howlands; Secretary, Jesse Tarkington, Indianapolis.

Indiana Farmers' Mutual Insurance Union—President, Aaron Jones, South Bend; Secretary, H. L. Nowlin, Lawrenceburg.

Indiana Jersey Cattle Club—President, M. A. McDonald, West Lebanon; Secretary, C. C. Topp, Indianapolis.

Indiana Corn Growers' Association—President, D. F. Maish, Frankfort; Secretary and Treasurer, Scott Meiks.

Farmers' Institutes—Director, Prof. W. C. Latta, Purdue University, Lafayette.

Experiment Station—Director, Prof. John Skinner, Purdue University, Lafayette.

State Chemist—Prof. Arthur Goss, Purdue University, Lafayette.

State Entomologist—Prof. James Troop, Purdue University, Lafayette.

State Hereford Cattle Breeders' Association—President, F. L. Studebaker, Bluffton; Secretary, C. E. Amsden, Waldron.

Indiana Angus Cattle Breeders' Association—President, Will R. Pleak, Greensburg; Secretary, George W. Henderson, Lebanon.

Indiana Chester White Swine Breeders' Association—President, L. A. Hinshaw, Zionsville; Secretary, W. H. Morris, Indianapolis.

Indiana Duroc Jersey Swine Breeders' Association—President, W. E. Jackson, Knightstown; Secretary, J. M. Phelps, New Castle.

Indiana Poland China Swine Breeders' Association—President, Adam F. May, Flat Rock; Secretary, W. H. Morris, Indianapolis.

Indiana Improved Live Stock Breeders' Association—President, W. S. Robbins, Horace; Secretary, Prof. J. H. Skinner, Lafayette.

Indiana Guernsey Breeders' Association—President, John Morgan, Plainfield; Secretary, Oliver H. Mills, Mooresville.

Indiana State Association of Farm Managers—President, J. J. Insley, Crawfordsville; Secretary, W. M. Blackstock, Lafayette.

ACTS OF THE LEGISLATURE GOVERNING THE INDIANA STATE BOARD OF AGRICULTURE.

AS TAKEN FROM HORNER'S ANNOTATED STATUTES 1901, VOL. I.

(2614) Incorporation. 4. The State Board, as at present constituted and organized, is hereby created a body corporate, with perpetual succession, in manner hereinafter described, under the name and style of the "Indiana State Board of Agriculture."

(2615) Officers. 5. It shall be the duty of the State Board to appoint a President, Secretary and Treasurer, and such other officers as they may deem necessary. The President shall have power to call meetings of the Board whenever he may deem it expedient.

(2616) Meetings. 6. There shall be held in the city of Indianapolis, on the first Tuesday after the first Monday in January, annually, a meeting of the Indiana State Board of Agriculture, together with the president of each county agricultural society or other delegate therefrom duly authorized, who shall for the time being be ex-officio members of the State Board of Agriculture, for the purpose of deliberation and consultation as to the wants, prospects and conditions of the agricultural interests throughout the State. And at such annual meeting, the several reports from the county societies shall be delivered to the President of the Indiana State Board of Agriculture; and the said presidents and delegates shall, at this meeting, elect suitable persons to fill all vacancies in said Board: Provided, however, that said election shall not affect the members of the Board present, whose term shall not be considered to expire until the last day of said session.

(2617) Annual Report. 7. It shall be the duty of said Board to make an annual report to the General Assembly of the State of the receipts and expenditures of the Board, together with such proceedings of the State Board and reports from county agricultural societies, as well as a general view of the condition of agriculture throughout the State, accompanied by such recommendations as they may deem interesting and useful.

(2618) State Fairs. 8. The Indiana State Board of Agriculture shall have power to hold State Fairs at such times and places as they may deem proper and expedient, and have the entire control of the same, fixing the amount of the various premiums offered, embracing every article of science and art, or such portions of them as they may deem expedient and proper, calculated to advance the interests of the people of the State. They may employ assistants, receive contributions, donations, etc., and unite with a county or district society for the purpose of defraying the expenses of said State Fairs.

(2619) Expenses. 9. The State Board of Agriculture shall certify to the Auditor of State the ordinary expenses of the Board proper, including the necessary personal expenses of their attendance on not more than two meetings in any one year. The Auditor shall audit the same, and, on his warrant, the Treasurer of State shall pay the same out of any money appropriated for agricultural purposes. -

(2620) May Buy Land. 1. The Indiana State Board of Agriculture is empowered to purchase and hold real estate, for the purpose of holding State Fairs and other uses of the Board, to an amount not exceeding two hundred and forty (240) acres; and to sell any real estate it may hold, for the purpose of reinvesting the proceeds in other real estate for the same general objects.

(2621) Purchase Ratified. 2. The purchase of real estate made by said Board, A. D. 1860, of William A. Otis and others, consisting of thirty-six acres of the northwest quarter of section thirty-six, township sixteen, range three east, in Marion County, are hereby ratified and confirmed; and the said Board is empowered to hold the same for the general objects of the Board: Provided, that nothing herein contained shall authorize said Board to hold more than eighty acres, as aforesaid.

(2622) Exempt from Tax. 4. The real and personal estate of said Board shall be exempt from taxation; and the County Treasurer of Marion County is authorized and required to pay to said Board the amount of taxes assessed and collected upon said real estate for said county for the years 1862, 1863 and 1864; and the Treasurer of State shall refund to said Board of Agriculture the amount of State taxes collected upon said real estate for the years aforesaid.

(2623) Yearly Appropriation. 4. The sum of ten thousand dollars (\$10,000) annually is appropriated for the use of the Indiana State Board of Agriculture, to be expended in the payment of premiums awarded by the said Board, to be paid out of the State Treasury upon the first day of April yearly, and to be receipted for by the President, attested by the Secretary of the said Board.

(2623a) Lands Exempt from Taxation. 1. That any part, parcel, or tract of land not exceeding eighty acres and the improvements thereon, owned by county or district agricultural associations of this State, organized agreeably to the provisions of "An act for the encouragement of agriculture," approved February 17, 1852, shall be exempt from taxation: Provided, that when the same shall cease to be used or occupied exclusively for the purpose specifically set out in said act, approved February 17, 1852, or shall fail in any way to comply with the provisions thereof, the same shall cease to be exempt from taxation.

(2624) Room for Specimens. 2. The Governor is hereby directed to select a convenient room in the Capitol, or in any building that may be

erected by the State, if a suitable one can be found, and, if not, hire one suitable for the deposit and safekeeping of such minerals, soils, ores, fossils, maps, sketches, etc., as may be collected and made by direction of said Board, which room shall be placed under the control of said Board.

(2625) **May Borrow and Mortgage.** 1. The State Board of Agriculture is hereby authorized and empowered to borrow the sum of sixty thousand dollars, at a rate of interest not exceeding six per cent. per annum, and for security of the payment of said sum, to mortgage its property in Marion County known as the State Fair grounds, and to apply the sum so borrowed to the payment of a like sum heretofore borrowed of one J. A. Hambleton, and to take up and destroy all notes, bonds and mortgages given therefor. And the said Board shall have power to issue bonds to the above named amount of sixty thousand dollars, and to make the said bonds payable ten years after date, but redeemable at the pleasure of said Board, on sixty days' notice after five years from date.

(2626) **Deed of Trust Postponed.** 2. To enable the said State Board of Agriculture to borrow said money, and to execute a satisfactory mortgage therefor, F. A. W. Davis, to whom said Board has heretofore executed a trust deed, to secure a repayment by said Board to the State of the sum of twenty-five thousand dollars, appropriated to the use of said Board by an act approved March 10, 1877, in section one, item five, of said act, is hereby authorized and required to release, satisfy and cancel said deed, and reconvey to said Board the interest described therein. And in lieu of such deed, the said Board shall execute a new deed of trust to said Davis, or, if the Governor and Attorney General so advise, to the Auditor of State; which new deed of trust shall be a lien on said State Fair grounds next after the mortgage provided for in the preceding section.

(2627) **Debt Prohibited.** 4. Said Board is hereby prohibited from borrowing money, or creating or contracting any further liability or debt, on the faith or credit of said property or any other property, or in any wise further incumbering the same with any lien or charge, except as heretofore in this act provided.

(2628) **Vacancies, How Filled.** 1. Whenever a vacancy in the office of the Secretary, Treasurer or Superintendent of the State Board of Agriculture shall occur by death, resignation or otherwise, the same shall be filled by appointment by the President of said State Board of Agriculture, which appointee shall hold said office until some regular meeting of the State Board of Agriculture.

AN ACT for the relief of the Indiana State Board of Agriculture, authorizing it to borrow money to pay off its existing indebtedness and for other purposes, and to repeal so much of an act concerning the State Board of Agriculture, approved April 14, 1881, as is now in force, being sections 2796, 2797 and 2798 in Burns' Annotated Indiana Statutes of the revision of 1901, and other matters properly connected therewith; and providing for an emergency.

(S. 114. Approved February 17, 1905.)

Whereas, The Indiana State Board of Agriculture is indebted in the sum of about forty-five thousand dollars (\$45,000) for unpaid purchase money on a part of its lands, known as the State Fair grounds, near to Indianapolis, in Marion County, Indiana, which sum it is unable to pay at the present time; and also needs and will need from time to time further sums to be used in erecting and maintaining necessary buildings and making other and permanent improvements from time to time, so as to enable it at all times to fully perform and discharge its duties under the law; and

Whereas, The indebtedness described in said act of April 14, 1881, published in the acts of said year at page 84, have each and all been long since fully paid and satisfied; now, therefore,

Section 1. Be it enacted by the General Assembly of the State of Indiana, That the Indiana State Board of Agriculture be and is hereby authorized and empowered to borrow money at such times and in such amounts as may be necessary for the payment of the existing indebtedness now outstanding for a part of the real property of the said State Board of Agriculture, known as the State Fair grounds, near Indianapolis, Marion County, Indiana; and other sums from time to time for the purposes of erecting and maintaining proper and necessary buildings and improvements to enable it at all times to carry out, perform and discharge its duties in giving State fairs and other purposes; and for the security and repayment of such loans, with interest, to mortgage its said real property, consisting of about two hundred and fourteen (214) acres, situate near to the city of Indianapolis, Marion County, Indiana, and commonly known as the State Fair grounds, together with the improvements now and hereafter placed thereon. And the said Board is authorized and empowered to apply the moneys borrowed to the payment of a certain note executed to the Columbia National Bank in part payment of the purchase price of said two hundred and fourteen (214) acres of land, and also of an existing mortgage on a part of said fair grounds and premises made to Theresa H. Smith; and to take up said indebtedness by whomsoever held, and to cancel all the notes, mortgages and obligations so

outstanding and to use the remainder of any sum so borrowed and other sums hereafter borrowed from time to time, in erecting new buildings on said fair grounds and in making and maintaining improvements and repairs. But the aggregate indebtedness occasioned by such loans shall not exceed the sum of eighty thousand dollars (\$80,000) at any one time, and the rate of interest shall not exceed six per cent. per annum.

Sec. 2. Any and all notes, bonds, mortgages given, issued or executed by said Indiana State Board of Agriculture shall be authorized by a majority of said Board in session and signed by its President and Secretary and attested by its corporate seal.

Sec. 3. The said Board shall have power from time to time to mortgage all or so much and such parts of said described Indiana State Fair grounds as its Board of Directors may determine in manner and form as described in Section 1. To secure such loans and if deemed best by such Board, then the Indiana State Board of Agriculture is hereby given power and authority under this act to issue bonds, as well as notes, in making any loan or loans in such denominations and amounts as the said Board may from time to time determine, with interest coupons attached in the usual manner; such notes and bonds to be made payable at such times and on such terms and conditions as may to the Board seem best; and to secure such bonds as well as notes by a mortgage or mortgages upon all or any part of said lands. Any and all notes and bonds so authorized, bearing such rates of interest as may be determined not exceeding six per cent. per annum and secured as aforesaid, the Board may sell from time to time at such prices as the majority of the members of said Board may authorize and direct at not less than par.

Sec. 4. In case bonds are issued in series or otherwise from time to time and secured as aforesaid, no bond shall have any priority by reason of the time or order of sale over any other bonds of the series secured by any such mortgage; but each bond secured by any mortgage shall be secured equally and ratably by such security.

Sec. 5. It is further enacted that "An act for the relief of the State Board of Agriculture, appropriating certain moneys for the use and benefit of said Board and postponing the lien of the State of Indiana on certain lands therein named and prohibiting said Board from further encumbering their property," approved April 14, 1881 (Acts of 1881, page 84), and set forth in part as Sections 2796, 2797 and 2798 of Burns' Annotated Indiana Statutes in the revision of 1901, and all other laws and parts of laws in conflict with the provisions of this act are hereby repealed.

Sec. 6. Whereas an emergency exists for the immediate taking effect of this act, therefore, it shall be in force from and after its passage.

CHAPTER XXVII.

AN ACT to exempt from taxation the mortgages, notes and bonds hereafter issued by the Indiana State Board of Agriculture.

(S. 115. Approved February 21, 1905.)

Whereas, The Indiana State Board of Agriculture exists for the benefit of the people of the State, in the property of which corporation there is no private or individual interest, but the same is held entirely for the public purpose of promoting agriculture, and

Whereas, The said Indiana State Board of Agriculture finds it necessary to borrow money to pay off and discharge an existing debt on the State Fair grounds and to make needed improvements on said grounds to enable said Board to better fulfill its duties, and

Whereas, It is beneficial to the State and people that the Board shall procure said loan at the lowest possible rate of interest, and in order to do so it is necessary to exempt the notes, bonds, mortgages and other evidences of the same from taxation, and

Whereas, The property of said Board is not subject to taxation under the Constitution and laws of the State of Indiana, and its securities issued thereon for the benefit of the people of the State as aforesaid should likewise not be taxable, therefore,

Section 1. Be it enacted by the General Assembly of the State of Indiana, That any and all mortgages, notes, bonds and evidences of indebtedness hereafter issued by the Indiana State Board of Agriculture and secured by mortgage upon its property, known as the State Fair grounds, in Marion County and near to the city of Indianapolis, Indiana, or otherwise, shall not be listed or assessed, but shall be exempt from taxation in this State.

THE

Indiana State Board of Agriculture

CONSTITUTION.

AS REVISED AND ADOPTED AT THE JANUARY MEETING OF THE BOARD, 1891.

Article 1. The name and style of this society shall be "The Indiana State Board of Agriculture," its object, to promote and improve the condition of agriculture, horticulture, and the mechanic, manufacturing and household arts.

Art. 2. There shall be held in the city of Indianapolis, at such time as may be prescribed by law, an annual meeting of the State Board of Agriculture, together with presidents, or other delegates duly authorized, from each county, or such other agricultural society as may be authorized by law to send delegates, who shall, for the time being, be ex-officio members of the State Board of Agriculture, for the purpose of deliberation and consultation as to the wants, prospects and condition of the agricultural interests throughout the State; and at such annual meetings the several reports from county societies shall be delivered to the President of the State Board of Agriculture; and the said President and delegates shall, at this meeting, elect suitable persons to fill all vacancies in this Board: Provided, however, That said election shall not affect the members of the Board present, whose terms shall not be considered to expire until the last day of the session.

Art. 3. The State Board-elect shall meet immediately after the adjournment of the State Board, for the purpose of organization and for the transaction of such other business as the wants and interests of the society may require; and hold such other meetings from time to time, for making out premium lists, preparing for State fairs, and all other business necessary to the promotion of the objects of the society.

Art. 4. The State Board-elect shall consist of sixteen members, chosen from the following districts:

1st District—Posey, Vanderburgh, Gibson, Warrick and Spencer counties,

- 2d District—Knox, Daviess, Martin, Pike, Dubois, Crawford and Perry counties.
- 3d District—Harrison, Washington, Orange, Floyd, Clark and Scott counties.
- 4th District—Jackson, Lawrence, Brown, Monroe, Greene, Owen, Johnson and Sullivan counties.
- 5th District—Jefferson, Switzerland, Ohio, Dearborn, Franklin, Ripley and Jennings counties.
- 6th District—Bartholomew, Decatur, Rush, Fayette, Union and Wayne counties.
- 7th District—Madison, Hancock, Hamilton, Henry and Shelby counties.
- 8th District—Marion County.
- 9th District—Clay, Vigo, Parke, Vermillion and Fountain counties.
- 10th District—Putnam, Morgan, Hendricks, Montgomery and Boone counties.
- 11th District—Delaware, Randolph, Jay, Adams, Wells, Huntington and Blackford counties.
- 12th District—Carroll, White, Benton, Newton, Tippecanoe, Warren, Jasper and Pulaski counties.
- 13th District—Clinton, Tipton, Howard, Grant, Wabash and Whitley counties.
- 14th District—Elkhart, Kosciusko, Fulton, Cass and Miami counties.
- 15th District—St. Joseph, Marshall, Starke, Laporte, Porter and Lake counties.
- 16th District—Allen, Dekalb, Steuben, Lagrange and Noble counties.

Chosen for two years, one-half of whose terms expire every year, to wit: Those representing the First, Second, Third, Fourth, Seventh, Fourteenth, Fifteenth and Sixteenth districts expire at the annual meeting of 1860, and those representing the Fifth, Sixth, Eighth, Ninth, Tenth, Eleventh, Twelfth and Thirteenth districts expire at the annual meeting to be held in January, 1861. To be chosen by ballot.

Art. 5. It shall be the duty of the President to preside at all meetings, conduct the business in an orderly and parliamentary manner, and officially sign all vouchers and drafts upon the Treasurer (except for premiums), and all other instruments requiring the same, and call special meetings in cases of emergency.

Art. 6. The State Board-elect shall, at the annual meeting after the adjournment of the delegate meeting, proceed to elect one of their number President, who shall hold his office for a term of one year, and until his successor is elected and qualified; and one of their number for Vice-President, whose term shall be the same as President, who shall act, and

for the time being have all the power, as President, whenever the President is absent from any regular meeting. They shall also elect some suitable person as Secretary and some suitable person as Treasurer, and a General Superintendent, who shall hold their offices each for one year, unless removed for incompetency or neglect of duty. They shall also elect four of their number who shall, with the President, constitute an Executive Committee, who shall have power to act in cases of emergency, where loss would result by waiting till a regular meeting of the Board, but shall have no power whatever during a meeting of the Board.

Art. 7. It shall be the duty of the Treasurer to safely keep the funds belonging to the society, pay out the same on orders or drafts drawn by the Secretary, and report annually to the State Board, and as much oftener as he may be called upon by the Board, and shall give bond for the faithful performance of his duties.

Art. 8. It shall be the duty of the General Superintendent to take care of and carefully keep all property belonging to the society, have the care and control of the fair grounds during the recess; have the supervision and oversight of such improvements or additions as may be directed by the State Board, and, under their direction, procure materials, contract for labor, and shall be, during the continuance of the fair, the chief marshal and head of the police. The members of the Board shall employ all the necessary police and gatekeepers.

Art. 9. The Secretary shall keep a true record of the proceedings. He shall conduct all correspondence on behalf of the society, except when otherwise directed by the President. He shall, by himself and assistants by him appointed, arrange the details of the entries, tickets and enroll the names of committees and judges of the State Fair, receive and record the various reports of the awarding committees, fill out and deliver all diplomas and certificates. It shall be the duty of the Secretary to condense the county agricultural reports for each year into one volume and superintend the publishing of the same. He shall audit and file all accounts against the Board; draw orders in favor of proper persons on the Treasurer for the amount; but orders shall not be drawn payable to order or bearer, but to the name of the party alone or his agent. He shall make an annual report, showing amount of all orders upon the treasury, and shall perform such other duties as the best interests of the society may demand; but he is at all times subject to the direction and control of the State Board.

Art. 10. At the annual meeting of the Board the salaries of the Treasurer, Secretary and Superintendent shall be fixed for the ensuing year; Provided, That said Board may, in their discretion, at any meeting of said Board, make said officers an additional allowance for extra services.

Art. 11. That no compensation shall be allowed to delegates attending the annual meetings of the State Board; nor shall the members of the State Board-elect be paid any sum of money, as compensation or otherwise, except by order of the Board-elect.

Art. 12. The State Board may adjourn from time to time, or they may be called together by the Secretary, by order of the President, by a written notice to each member, enclosed by mail, and a notice of such meeting published in two or more newspapers of general circulation, in the city of Indianapolis; and all meetings so held by adjournment, or calls, shall be deemed regular and legal.

Art. 13. Any alteration or amendment to this Constitution may be made at the annual meeting of the State Board, two-thirds of all the members voting for such amendment.

Art. 14. The following standing committees shall be appointed by the President, to whom all matters of business coming up for reference under their particular heads shall be referred, unless otherwise specially directed by the Board:

1. Finance and Claims.
2. Rules and Regulations.
3. Fair Grounds.
4. Unfinished Business.
5. Geological Survey—Executive Committee, ex-officio.
6. Premium List.

AMENDMENTS TO THE CONSTITUTION.

At the May meeting in 1851, certain rules, embracing ten sections, for the government of county agricultural societies, were adopted by the Board of Agriculture, as required in Section 1 of the statute laws enacted by the Legislature of Indiana for the "Encouragement of Agriculture," approved February 17, 1852.

At the February meeting of 1868 the rules were found inexpedient and were repealed, and the following resolutions, submitted by the Committee on Rules and Regulations, were adopted:

Resolved, That all county and district societies shall be organized and governed by the laws of the State of Indiana in regard to agricultural societies, and especially under the act passed by the Legislature and approved February 17, 1852.

Resolved, That all societies so organized will be entitled to send delegates to this Board (State Board of Agriculture) at its annual meetings, and will be received and acknowledged upon the presentation of their reports and credentials, and compliance with the laws as legally organized societies.

Minutes of the Board.

MEETING OF EXECUTIVE COMMITTEE, AUGUST 4, 1904.

On August 4, 1904, the Executive Committee of the Indiana State Board of Agriculture met pursuant to the call of the President at the office of the Secretary of the Board in the State House.

The following members were present: Messrs. Haines, Conger, Beauchamp and Claypool. Mr. Niblack was absent.

Mr. Fesler submitted a proposition to place an advertisement for the State Fair in the Marion County Mail, a newspaper published in this city, of a quarter column from this date until after the fair for seventy single admission tickets to be used by correspondents of his paper.

Mr. Wallace presented and moved the adoption of the following resolution, which was seconded by Mr. Claypool and unanimously adopted:

(Resolution not on file.)

JOHN C. HAINES,
President.

CHARLES DOWNING,
Secretary.

MEETING OF EXECUTIVE COMMITTEE, SEPTEMBER 1, 1904.

The Executive Committee of the Indiana State Board of Agriculture met pursuant to the call of the President at the office of the Secretary in the State House.

There were present the President, Hon. John C. Haines, and Messrs. Niblack, Conger, Wallace, Beauchamp and Claypool.

The President announced that the object of the meeting was to close up the matter of the purchase of the 134 acres of land held

by the Board under lease and option to purchase from Mrs. Theresa H. Smith on the proposition of Mrs. Smith, made through her attorneys, Hawkins & Smith, which proposition is as follows:

Mrs. Smith is to convey to the Board by warranty deed the 134 acres of land now held by the Board under lease from her with option to purchase for the sum of \$40,200, with the accrued interest thereon from January 23, 1902, at 6 per cent., amounting to the sum of _____ and also the amount due for rent with the accrued interest thereon, amounting to \$ _____, making a total of \$49,628.96; sixteen thousand five hundred and sixty-eight dollars and seventy cents of which is to be paid in cash, and the Board is to execute two notes for the balance: one for \$16,530.13, due October 1, 1905, and the other for \$16,530.13, due October 1, 1906, with interest at the rate of 6 per cent. per annum from date until paid, secured by a mortgage upon the 134 acres of land purchased. And in addition thereto the Board is to pay Hawkins & Smith the sum of \$500, the Board to pay the costs in the case of the Indiana State Board of Agriculture vs. Theresa H. Smith et al.

On motion of Mr. Conger, seconded by Mr. Wallace, the proposition of Mrs. Smith as above set out was accepted, and the President and Secretary of the Board were directed and empowered to sign notes and execute a mortgage to secure the same in accordance with said proposition.

In accordance with the order and direction of the committee, the President and Secretary of the Board reported that on September 1, 1904, they paid to Mrs. Smith in cash the sum of \$16,568.70, and delivered to her two notes, each calling for \$16,530.13, due October 1, 1905, and October 1, 1906, respectively, with 6 per cent. interest from date, without relief from valuation or appraisement laws, and providing for attorney's fees, and executed a mortgage upon the 134 acres of real estate so purchased to secure the payment of said notes. And the President at the same time delivered to Hawkins & Smith an order on the Treasurer for the sum of \$500, and thereupon Hawkins & Smith, attorneys for Mrs. Smith, delivered to Mr. Haines, President of the Board, for the Board, the following warranty deed:

WARRANTY DEED.

This indenture witnesseth, That Theresa H. Smith, unmarried, of Marion County, in the State of Indiana, conveys and warrants to Indiana State Board of Agriculture, a corporation organized under the laws of the State of Indiana, of Marion County, in the State of Indiana, for the sum of forty thousand two hundred dollars (\$40,200), the receipt of which is hereby acknowledged, the following real estate in Marion County, in the State of Indiana, to wit: Part of the southwest fractional quarter and part of the southeast quarter, all in section eighteen (18), township sixteen (16) north, range four (4) east, in said county and State, described as follows: Beginning on the west line of said section at a point thirteen hundred and twenty (1,320) feet north of the southwest corner thereof, and running east parallel to the south line of said section twenty-six hundred and eighty and twenty-five hundredths (2,680.25) feet; thence south parallel to the west line of said section thirteen hundred and twenty (1,320) feet to the south line of said section; thence east, with said south line, to the center of Fall Creek; thence northeastwardly with the center of Fall Creek, to the west line of the Peru Railroad right-of-way, now called the Lake Erie and Western Railroad; thence northwardly with the west line of said right-of-way to the north line of the south half of said section eighteen (18); thence west with the north line of the south half of said section to the northwest corner of the southwest quarter of said section; thence south with the said west line of said section eighty (80) rods, more or less, to the place of the beginning, except a strip forty (40) feet wide on the west side of said section, heretofore sold to the Louisville, New Albany and Chicago Railroad Company; containing clear of said railroad strip, one hundred and thirty-four (134) acres, more or less.

In witness whereof, The said Theresa H. Smith, unmarried, has hereunto set her hand and seal this sixteenth day of July, 1904.

(Signed) THERESA H. SMITH.

Thereupon, on motion, the committee adjourned to meet on the call of the President.

JOHN C. HAINES,
President.

CHARLES DOWNING,
Secretary.

MEETING OF BOARD, FAIR GROUNDS, SEPTEMBER 12, 1904.

The Indiana State Board of Agriculture met in the Administration Building at the Indiana State Fair Grounds for the purpose of conducting the Indiana State Fair for 1904.

The meeting was called to order by the President, Mr. John C. Haines.

Upon the roll being called, all the members responded to their names. There were also present, J. W. LaGrange, Treasurer; Charles Downing, Secretary, and E. H. Peed, Superintendent.

The following resolution was offered by Mr. Niblack, seconded by Mr. McDonald, and upon being put to a vote by the President was unanimously adopted:

On motion of Mr. McDonald, seconded by Mr. Niblack, it was ordered that all helpers' tickets be honored at the gates when endorsed by an assistant superintendent.

The members of the Board assumed the charge of their different departments and the fair was declared formally opened.

The Board adjourned to meet tomorrow at 9:00 o'clock a. m.

JOHN C. HAINES,
President.

CHARLES DOWNING,
Secretary.

MEETING OF BOARD, SEPTEMBER 16, 1904.

The Indiana State Board of Agriculture met in its room in the Administration Building at the Fair Grounds, Friday, September 16, 1904, pursuant to the call of the President.

The President, Mr. Haines, called the meeting to order, and upon the roll being called all the members of the Board except Messrs. Porter and Benjamin responded to their names.

On motion of Mr. McDonald, seconded by Mr. Niblack, the matter of the claim of F. M. Barnes of Chicago, on account of the

special attraction of Dare Devil Tildon, was referred to the President, Secretary and Mr. Wallace for adjustment, with power to act.

On motion of Mr. McDonald, seconded by Mr. Beauchamp, the matter of purchasing the show cases and other material at the World's Fair in St. Louis was referred to a committee composed of the President, Secretary and Mr. McDonald.

Mr. McPherson of Fairfield, Iowa, an exhibitor at the fair, presented a grievance growing out of the awards in prize numbers 54, 58 and 221.

On motion of Mr. Wallace, seconded by Mr. Thompson, the bill of E. J. Craig for \$70.30, the amount of the contract price for constructing the trestle for Dare Devil Tildon's performance, was allowed and ordered to be paid.

On motion of Mr. McDonald, seconded by Mr. Blackstock, the Board authorized Mr. John L. Thompson to collect evidence in the claim against the U. S. Government.

On motion of Mr. McDonald, seconded by Mr. Claypool, the Secretary was authorized and empowered to issue warrants for all unpaid premiums and claims founded on contracts on account of advertising and putting on the fair.

On motion, duly seconded, all unfinished business was referred to the Executive Committee.

JOHN C. HAINES,
President.

CHARLES DOWNING,
Secretary.

MEETING OF EXECUTIVE COMMITTEE, OCTOBER 20, 1904.

The Executive Committee of the Indiana State Board of Agriculture met pursuant to the call of the President at the office of the Secretary of the Board in the State House.

There were present the Hon. John C. Haines, President; David Wallace, Vice-President; and Messrs. Niblack, Claypool and Beauchamp.

Mr. E. J. McGowan was present and presented a bill for extra expense in connection with the diving horses contract. On motion of Mr. Wallace, seconded by Mr. Niblack, \$114.60, being one-half of the extra expense incurred by Mr. McGowan in preparing the pit so that it would retain the water and on account of filling same, was allowed and ordered to be paid.

Messrs. Lieber, Vonnegut and Stechan appeared before the Board in the interest of the North American Gymnastic Union and requested the use of the fair grounds for the week of June 21, 1905. On motion of Mr. Niblack, seconded by Mr. Beauchamp, the Board granted the North American Gymnastic Union the free use of the fair grounds for the week of June 21, 1905, subject to the rights of the horse trainers and persons having privilege contracts with the Board.

Mr. Hoover, secretary of the Commercial Club, presented a statement of State Fair tickets subscribed for and sold by the Commercial Club of Indianapolis. On motion of Mr. Wallace, seconded by Mr. Beauchamp, the Board ordered that the tickets unsold by the Commercial Club be redeemed by the Treasurer.

Mr. Wallingford of the Civic Improvement League of Indianapolis addressed the Board on the subject of improving and beautifying the fair grounds.

Letters from several persons who made entries in the speed classes, requesting the return of entrance fees paid, were read by the Secretary. On motion, duly seconded, the Board ordered that no return be made of the entrance fees and that the Secretary require persons making entries to abide by the rules of the American Trotting Association.

On motion of Mr. Wallace, seconded by Mr. Niblack, it was ordered by the Board that the Treasurer pay the note of \$5,000 given to the Columbia National Bank.

On motion of Mr. Conger, seconded by Mr. Wallace, the Secretary of the Board was instructed to have the show cases donated by the World's Fair Commission to the Board, crated and shipped with the glass jars loaned the commission.

On motion of Mr. Wallace, seconded by Mr. Claypool, the Secretary was instructed to settle all premiums awarded according to the report of the judges in the award books.

On motion of Mr. Wallace, seconded by Mr. Niblack, the bills of Wild & Co., the Union Central Trust Company and C. N. Williams Co. were referred to Mr. Conger for adjustment, with power to act.

On motion of Mr. Wallace, seconded by Mr. Conger, the Board ordered that the building of the road around the east end of the track be postponed.

On motion of Mr. Wallace, seconded by Mr. Niblack, the President was authorized to appoint a committee to ascertain the cost of resurfacing the mile track and report same at the next meeting. The President appointed Messrs. Claypool, Beauchamp and Downing.

There being no further business, the committee adjourned to meet on the call of the President.

JOHN C. HAINES,
President.

CHARLES DOWNING,
Secretary.

ANNUAL MEETING—1905.

The fifty-third annual meeting of the Delegate Board of the Indiana State Board of Agriculture met in the rooms of the Indiana State Board of Agriculture in the State House in the city of Indianapolis, Indiana, on Tuesday, January 3, 1905, at ten o'clock a. m. pursuant to the law governing the Indiana State Board of Agriculture and the published notice and program.

There were present: Hon. John C. Haines, President; Hon. David Wallace, Vice-President; Hon. Charles Downing, Secretary; Hon. J. W. LaGrange, Treasurer; Hon. E. H. Peed, Superintendent.

Upon roll call the following members responded to their names:

1st District—John C Haines	Rockport.
2d District—Mason J. Niblack	Vincennes.
3d District—E. S. Tuell	Corydon.
4th District—John Tilson.....	Franklin.
5th District—H. L. Nowlin	Lawrenceburg.
6th District—Knode Porter.....	Hagerstown.
7th District—David Wallace.....	Indianapolis.
8th District—Sid Conger.....	Shelbyville.
9th District—W. T. Beauchamp	Indianapolis.
10th District—Oscar Hadley.....	Plainfield.
11th District—M. S. Claypool.....	Muncie.
12th District—Wm. M. Blackstock	Lafayette.
13th District—John L. Thompson	Gas City.
14th District—Jos. Cunningham.....	Peru.
15th District—C. B. Benjamin	Leroy.
16th District—Jas. E. McDonald.....	Ligonier.

There were also present a number of delegates representing agricultural and horticultural societies throughout the State, who presented their certificates of election.

When the meeting was declared open by the President, the Hon. John W. Holtzman, mayor of the city of Indianapolis, who was present by invitation, was introduced by the President and addressed the meeting as follows:

MAYOR HOLTZMAN'S ADDRESS.

Mr. Chairman and Gentlemen—When I am introduced to an audience of this kind with the announcement that I am going to deliver an address of welcome, I am always impressed with the word “address”. The word “address” would indicate that I am going to say something of importance, and I am afraid you will be disappointed.

I take great pleasure in welcoming you for the second time to the city of Indianapolis. I know of no association of men who do more for the city of Indianapolis than you do; and I hope that the members of the Legislature of the State of Indiana will realize that you are doing as

much as any body of men to build up the State as well as the capital, and that you will be given such assistance as you think you ought to have in making the State Fair even a greater success than you have made it in the past.

The city of Indianapolis is always open to you, and the people here are sincerely grateful to you for what you have done to break down the feeling that used to exist between the State outside of Indianapolis and the city. There used to be quite an antagonistic feeling toward Indianapolis; but I believe the day has come when every Hoosier is proud of the capital city, and you have done much to bring about that feeling. We are grateful to you for that.

I was asked this morning whether I was a farmer, and I told the young man who asked the question that I was a winter farmer, and that this was a good time for me to talk of things of that kind. I said I could probably do as much sitting around the stove in a country store and talking as the average man. I am sorry the weather is not just as perfect as I wanted to make it for you; but I want you to bear in mind that the administration in Washington is not in full accord with me politically, and that I have an adverse council in Indianapolis. For that reason you must bear kindly with me. I hope, however, that your stay here will be enjoyable and that your business meetings will be attended with success. I also hope that your influence with the incoming Legislature will be such that you will get what is needed to make the State Fair the success which you have made it in the past, and which I know, if you are given the proper assistance, you will make it in the future.

I again extend to you a cordial welcome and assure you that all the good things in Indianapolis are yours. The city and all that is therein I tender to you during your stay in our city.

After the address of Mr. Holtzman, Mr. Wallace, Vice-President, was called to the chair by President Haines, and President Haines delivered his annual address as follows:

MR. HAINES' ADDRESS.

It is my pleasure to briefly review what has been a glowing year in the affairs of the Indiana State Board of Agriculture and the State Fair.

Circumstances, which no body of men could have controlled, made it necessary in the other years of our history to bring to the annual meetings of this Board gloomy reports of our enterprise, but during the last twelve months every member of the Board has been energetic in its behalf, and they have been ably supported by outside influences, backed by favorable weather during the State Fair, and all these have combined in making a season of unusual progress with us.

The most important thing accomplished by the Board, not including the fair itself, has been the purchase of 134 acres of land which has been under lease for fair purposes, giving us a total of 214 acres of most valuable land. The purchase price of the 134 acres was \$40,200, and I am strong in the belief that the Board will in years to come find it a wise investment, although we now have to bear the burden of indebtedness for it. Time has shown that the State Board made no mistake in taking the fair to its present location. The city of Indianapolis is expanding in that direction and in time promises to entirely surround our grounds, as it did years ago when the fair grounds were nearer the heart of the city. That this later move was a good one has been evident by the fact that land surrounding the present grounds has been selling at from \$500 to \$1,000 an acre, a good deal of it having been cut up into small tracts, upon which pretentious suburban homes have been erected.

The fair now has a home where it can be expanded for fifty years without outgrowing its location. I believe the people of Indiana this year more than ever showed their faith in our enterprise, showed their faith in it as an industrial and agricultural enterprise, and made it evident that they feel its force as an educational institution. This evidence came through the remarkable attendance, the highest with the exception of 1876, when there was an extraordinary attraction; in addition to this public support, we had the backing of an unusual number and class of exhibitors. The newspapers of Indianapolis and over the State showed their good will in their generous support. To the Indianapolis Commercial Club and the Merchants' Association of Indianapolis we owe much of the support given the last fair. There is no doubt but these two business associations wielded a wide influence in our behalf and made it evident that with their continued support we can accomplish still greater results. I am strong in the belief that we can not do too much toward promoting the closest relations with the business men of Indianapolis.

For many years the most perplexing problem in connection with the fair was that of transportation, but through the energy of the Indianapolis Traction and Terminal Company this problem reached a perfect solution last September. The service every day of the fair was highly satisfactory. The interurban lines gave fine service and aided the people of the State to get to the fair with speed and comfort. Fine as this transportation has been, there is every indication that it will hereafter be better. By the next fair the bridge over Fall Creek at College avenue will doubtless be completed, which will give the street railway company three distinct lines to the fair, instead of two.

All conditions of the fair have reached a point where the enterprise must be materially broadened in scope. With a fine location, the fair is now ready for permanent improvements, and this is one of the most serious problems which the Board must face in the next few years. For many years the Board has been burdened and worried with debt. The

success of one year has meant that its profits must go to make up the failures of a former year. What the Board has gained has been only through economy and the stress of dark days in its business affairs. I believe that the time is ripe for the State of Indiana to give this fair a helping hand through the Legislature. I believe the people of the State, and especially the live stock breeders, realize that this time has come, that the State Board needs this help, and that they are more than willing that it should be extended. I believe that the coming Legislature should through an appropriation pay for the tract of land which we lately purchased, lifting the yoke of the principal and interest from the shoulders of the Board and leave us free to take up other pressing problems. I believe that the Legislature should follow this action in later years by appropriations that will enable the Board to work out the problem of permanent improvements and help us to lift the Indiana fair to the plane of the fairs in Ohio, Illinois, New York, Iowa, Minnesota and other States. Without this aid from the State Legislature, the Board can not hope for relief from the worries which have beset it and held it back in the last fifty years. We need buildings of brick and steel that exhibitors may have ample protection. It is only with buildings of this character that we may hope to induce the merchants to make displays and expand the fair in this direction. We need a coliseum for our live stock shows—a building of magnitude and on pretentious scale. We need permanent improvements in the way of walks and drives. None of these things can we hope to develop unless aid comes from the Legislature, and this aid will not be given unless the live stock breeders and exhibitors assist the Board in securing the same.

I recommend that the Board delay no longer in resoiling the race course. This should have been done a year ago, and the need of this improvement becomes more urgent. It is only by resoiling it that the race course can be brought to the high standard which marked its earlier years. At the close of the World's Fair at St. Louis I bought show cases and similar equipment for the Art Building on our grounds, paying \$700 and cost of crating and freight for them. This equipment will be found desirable for exhibition purposes at our fair, and the purchase price was about one-tenth what it would cost from the makers.

The presidents of this Board find from year to year that they must lean upon their associates. I have found this to be true, that I have found no shirkers among the officers of the Board. The Executive Committee is commended for its constant zeal and earnest effort in upbuilding the affairs of the Board. They have given the Board and its affairs the same careful judgment which they bestow on their private business. It is to these officers that you owe more obligation than you do to your President in the last twelve months. It is through your persistence, caution and growing faith in the purposes of this Board, in your untiring

efforts to move our enterprise to a high point of development, that you will in the end accomplish all purposes for which the State Board was created.

At the conclusion of President Haines' address, Governor Durbin was introduced and addressed the meeting as follows:

GOVERNOR DURBIN'S ADDRESS.

I am here for a moment only to extend to you the executive greeting, and wish that the future of your organization may be even more prosperous than in the past.

There is one thing I want to suggest to you for your consideration. A commission provided for by the last Legislature is looking for a site on which to erect a new building for the school for the deaf. That commission is composed of the members of the institutional board, the Attorney-General and myself. Our attention has been attracted to the land immediately north of the fair grounds, but there appears to be a decided objection to that location on account of your barns, used, I believe, by the trainers. It has occurred to myself and to the Attorney-General that if that objection was removed the State might buy the land and erect a school there. You can see for yourselves that those buildings are not very inviting to look upon. That is the feeling of the commission. I don't say that the commission will select that land; but I am prepared to say they will not do it while those buildings are there. If your Board could see fit to say to this commission that the barns will be removed, I would at least venture to say that it would receive great consideration by this commission, and they might buy the land and erect buildings there for a school for the deaf.

I wish each and every one of you health, happiness and prosperity for the coming year.

At the close of Governor Durbin's remarks, Attorney-General Chas. W. Miller, J. E. McDonald, Robert Mitchell and others made remarks on the question of removing the speed barns from their present location to meet the views of the committee from the Legislature, who had in charge the matter of selecting a site for the Girls' Reform School, as follows:

Attorney-General Miller was introduced by President Haines, and said:

Mr. Chairman and Gentlemen—I can add but little to what the Governor has said in connection with this matter. I went over the land

the Governor has spoken of with the members of the board of the Institution for the Deaf and Dumb. The serious objection that was made by the members was on account of the barns spoken of by the Governor. They are located near the place where the buildings would be erected if the land was selected. It seemed to the members of the commission that this was a very desirable tract of land for their purpose if it were not for the fact that the outlook was unfavorable by reason of the barns located on the fair grounds. I can only corroborate what has been said by the Governor, that we do not want it understood that we will purchase this land even if we know the barns will be removed, but I do want to say to you that the location was looked upon as a very favorable one. All the conditions seem to be very favorable except the location of the buildings we have referred to.

I came here merely to make this statement as a member of the commission. I am pleased to see you all here, and hope to see you all personally in the future.

President Haines: You have heard the remarks of the Governor and of the Attorney-General. We would now like to hear from the members of the Board who are present if they have anything to say upon this question. The matter is open for discussion.

Mr. J. E. McDonald: I do not exactly grasp the situation. I think if the fellows out here who have the land for sale and the people in that part of the country who are interested in having the institution moved in that direction, and possibly the State Board of Agriculture, might get together and agree upon a plan for removing the objectionable buildings. I don't see how this Board can act. In the first place, those barns were put there for a purpose, and put there in good faith. They may not be there permanently, but they are in good condition and the cost of removing them or rebuilding would be considerable. I do not think this expense should be borne by the State Board of Agriculture. I do not exactly understand where the returns will come in for any expense the State Board may be put to in removing them.

Mr. Robert Mitchell: Why could not the State Board sell them a piece of land on the northeast of the fair grounds? There is more land there than is absolutely needed for State fair purposes.

The price you would get for that land would liquidate the debt and make some improvements. I speak of the high land on the northeast. That would give the institution a good view and would not necessitate the moving of any of the barns. I make this merely as a suggestion. A building of that kind out there would increase the value of the land held by the State Board of Agriculture. There are thirty acres of land there that is not used for anything but a cornfield. I think this is a matter the board might take up for consideration.

Secretary Downing: Perhaps Mr. Mitchell does not understand the situation. The commission wants about eighty acres of land. The land the Governor spoke of is north of our grounds. They also have an option on eighty acres of land owned by Mr. Johnson, which corners with ours on the northwest. The amount of land we have in the northeast corner would not avail them at all. It is not enough, and if they located on our grounds they would want us to move all our buildings. A member of the commission spoke to me about this matter the other day, and asked me if I thought the Board would remove the speed stables if they bought the land. I said I did not believe the Board would, but if they bought the land I thought the Legislature would make an appropriation to build new buildings near the Lake Erie tracks. They have not bought any land yet. They are looking at a number of pieces. I think it will be time enough to negotiate for the removal of the barns after they have made their purchase. I don't believe the barns would be a very great obstacle. One member of the Board said they would have them declared a nuisance, and have them removed in that way, if they bought the land. I said they could hardly do that if they bought the ground knowing the present surroundings. I think if they buy the land they might compensate us for moving the buildings, or build new buildings for us in some other part of the grounds. They have not been very generous with us at any time, and I think they could afford to do that.

The Civic Improvement Association, of Indianapolis, sent a committee over here some time ago with a view of interesting the State Board of Agriculture and the Legislature in improving the State Fair Grounds and making them a beautiful park. They are willing to assist us in every way. We told them we were powerless to do anything in that line because we did not have the means. I said if they would assist us in getting an appropriation from the Legislature we would co-operate with them and go to the furthest extent in making the grounds beautiful. If we could get the assistance of the Legislature in beautifying the grounds and get an appropriation to move the buildings if they purchase the land spoken of, it would be a good thing. But until they have some definite sort of a proposition to make I think we are firing in the dark. I think they prefer the Johnson tract, and if they get that their buildings will be on Central avenue and our barns could not under any conditions be a nuisance to them. We ought to hesitate about attacking the barns until spring, anyhow.

Mr. Johnson: The difference in the prices of the two pieces of property referred to by Mr. Downing would not begin to pay the State to remove the barns. They have an option on the Johnson property and also on the Allen property; but the difference in the prices of the two tracts would not begin to pay for the removal of the buildings by the Board or by the State. The Allen option is four hundred dollars an acre, but there are some conditions in that option that are very objectionable to the commissioners. There is a road laid out there by transfer through the center, and it can not be removed; it will always have to stay there. The tract the option is on lies east and west. They are negotiating to change that and let it run north and south. That would run it along the Monon, and the barns would not be so objectionable in that case. Our option is one thousand dollars an acre.

President Haines appointed the following committees:

On President's Address: Mason J. Niblack, John L. Thompson and Sid Conger.

Auditing Committee: Oscar Hadley, Ed. S. Tuell, John Tilson.

On Credentials: James E. McDonald, David Wallace, M. A. McDonald.

Secretary Downing read the reports of the Secretary and Treasurer, which are as follows:

SECRETARY'S REPORT.

Indianapolis, January 2, 1905.

To the President and Members of the Indiana State Board of Agriculture:

Gentlemen—I hereby submit a report of the receipts and disbursements of the Indiana State Board of Agriculture for the year ending January 2, 1904, as follows:

Receipts.

Balance in Treasurer's hands January 5, 1904.....		\$3,355 91
Loans	\$17,520 00	
Appropriation from the State.....	10,000 00	
Rents from track, stable and grounds.....	2,729 15	
Stall and pen rents.....	1,323 00	
Privileges	4,605 50	
Entry fees	4,193 75	
Exhibitors' tickets	762 00	
Admissions, grand stand and reserved seats.....	33,305 50	
Special premiums	98 50	
Miscellaneous	15 00	74,552 40
		<hr/>
Total		\$77,908 31

Disbursements.

Members' per diem.....	\$3,588 90
Salaries of officers.....	3,172 50
Construction, labor and repairs.....	4,524 43
Insurance	1,583 40
Loans repaid	6,439 02
First payment of Smith land purchase.....	16,530 13
Postage, telegraph and telephones.....	680 26
Freight and express.....	51 93
Printing, stationery and supplies.....	1,000 60
Advertising	4,829 44
Police	372 40

Assistant superintendents and judges.....	2,769 08
Fair supplies	1,627 62
Premiums	21,120 00
Special attractions	1,697 80
Special tickets redeemed.....	60 00
Music	540 00
Mules, harness and wagons.....	1,021 70
Clover seed and seed oats.....	86 93
Lumber	435 08
Expense of war claim.....	360 00
Miscellaneous	1,310 05
Balance	4,106 44
Total	\$77,908 31

The following is a complete list of all warrants outstanding and unpaid at this date:

1692. Middletown Farmers' Advance.....	\$2 50
1721. Sheridan Call	1 50
1730. Tipton Dispatch	3 00
1743. Winchester Republican	1 50
1787. A. C. Alexander.....	140 00
1788. A. C. Alexander.....	200 00
1795. Central Union Telephone Company.....	8 70
1798. State Florist Association.....	25 00
1800. Strawmyer & Nilius.....	2 70
1808. Columbia National Bank.....	75 00
1811. M. S. Claypool.....	48 30
1812. Remington Typewriter Company.....	2 00
1813. Federal Union Surety Company.....	10 00
1814. The Club Stables.....	5 00
1815. Indianapolis Sentinel Company.....	5 20
1816. Charles Downing	342 25
1817. William B. Burford.....	21 25
1818. J. E. McDonald.....	125 50
1819. John C. Haines.....	177 00
1820. Sid Conger	78 00
Total	\$1,274 40

STATEMENT OF FAIR OF 1904.

Receipts.

Admissions, grand stand and reserved seats.....	\$33,305 50
Privileges	4,605 50
Entry fees	4,193 75

Exhibitors' tickets sold.....	762 00	
Stall and pen rent.....	1,323 00	
Special prizes	98 00	
		<hr/>
Total		\$44,287 75

Disbursements.

Premiums—

Speed horses	\$7,150 00	
Show horses	2,357 00	
Cattle	1,313 00	
Sheep	1,713 00	
Swine	1,026 00	
Poultry	1,097 00	
Fruits	620 25	
Flowers	483 00	
Bees and honey.....	50 00	
Dairy products	172 00	
Agriculture	821 00	
Art	1,172 75	
Table luxuries	145 00	
Special attractions	1,697 80	
Members' per diem for the year.....	3,588 90	
Officers' salaries	3,072 50	
Postage, telegraph and telephones for the year.....	680 26	
Freight and express for the year.....	51 93	
Printing, stationery and office supplies for the year..	1,000 60	
Advertising	4,829 44	
Assistant superintendent and judges.....	2,769 68	
Police	372 40	
Supplies for the year.....	1,627 62	
Special tickets redeemed.....	60 00	
Music	540 00	
Profits of the fair.....	3,776 13	
		<hr/>
Total		\$44,287 75

Respectfully submitted,

CHARLES DOWNING,

Secretary.

TREASURER'S REPORT.

To the President and Members of the Indiana State Board of Agriculture:
Gentlemen—I hereby submit my report for the year ending January 3, 1905, as follows:

Receipts.

Balance on hand January 5, 1904.....		\$3,355	91
Received from the Secretary.....	\$41,246	90	
Received from admissions.....	33,305	50	74,552 40
Total		\$77,908	31

Disbursements.

Paid warrants of 1903.....	\$972	88	
Paid warrants of 1904.....	72,527	47	
Balance in the treasury.....	4,407	96	
Total.....		\$77,908	31

Respectfully submitted,

J. W. LAGRANGE,
Treasurer.

On motion the reports of the Secretary and Treasurer were referred to the Auditing Committee.

On motion the meeting adjourned until 9:30 a. m., January 4th.

Wednesday morning, January 4, 1905, the Delegate Board of the Indiana State Board of Agriculture met pursuant to adjournment and was called to order by the President, John C. Haines.

All the officers and members of the Indiana State Board of Agriculture were present. Also, all the delegates who were in attendance yesterday were present.

The Committee on Credentials made the following report, which on motion duly seconded, was adopted.

JOHN C. HAINES,
President.

CHARLES DOWNING,
Secretary.

REPORT OF COMMITTEE ON CREDENTIALS.

To the President and Members of the Indiana State Board of Agriculture, and Delegates to the Indiana State Board of Agriculture:

Gentlemen—We, the undersigned Committee on Credentials, beg leave to submit the following list of delegates, who are entitled to vote in this body:

FIRST DISTRICT.

Member of the Board, John C. Haines.

<i>Name of Fair.</i>	<i>Delegate.</i>	<i>Address.</i>
Rockport	J. C. Haines.....	Rockport.
Chrisney	J. C. Haines.....	Rockport.
Evansville	J. C. Haines.....	Rockport.
Gibson Co. H. and A. Soc.....	Robert Mitchell.....	Princeton.

SECOND DISTRICT.

Member of the Board, Mason J. Niblack.

Vincennes	Mason J. Niblack.....	Vincennes.
Sullivan	W. F. Hulett.....	Crawfordsville.

THIRD DISTRICT.

Member of the Board, E. S. Tuell.

Corydon	Frank R. Wright.....	Corydon.
Floyd Co. H. and A. Soc.....	C. W. Brubeck.....	Georgetown.
Salem	J. E. McDonald.....	Ligonier.
Floyd Co. Agricultural.....	W. E. McCulloch.....	New Albany.

FOURTH DISTRICT.

Member of the Board, John Tilson.

Bedford.....	Robert Mitchell.....	Princeton.
Franklin.....	H. E. Lockery.....	Franklin.
Nashville	H. B. Miller.....	Nashville.
Johnson Co. Agr. Ass'n	John F. Tilson.....	Franklin.
Edinburg Trotting Ass'n	Sid Conger.....	Shelbyville.

FIFTH DISTRICT.

Member of the Board, H. L. Nowlin.

<i>Name of Fair.</i>	<i>Delegate.</i>	<i>Address.</i>
Osgood	Robert A. Cregmile	Osgood.
Lawrenceburg	H. L. Nowlin	Lawrenceburg.
Columbus	H. L. Nowlin	Lawrenceburg.
East Enterprise	F. M. Miller	East Enterprise.
Decatur Co. Agr'l Ass'n	H. L. Nowlin	Lawrenceburg.

SIXTH DISTRICT.

Member of the Board, Knode Porter.

Rushville	Thomas J. Humes	Rushville.
Liberty	Walter Abernathy	Liberty.
Hagerstown	Knode Porter	Hagerstown.
Wayne Co. A. and H. Ass'n	Walter S. Ratliff	Richmond.

SEVENTH DISTRICT.

Member of the Board, Sid Conger.

Anderson	M. S. Claypool	Muncie.
Red Men's Fair Ass'n	M. A. McDonald	West Lebanon.
New Castle	F. P. Modlin	New Castle.
Elwood Fair	J. W. LaGrange	Franklin.
Sheridan	Col. Sturtevant	Noblesville.
Cicero	Col. Sturtevant	Noblesville.

EIGHTH DISTRICT.

Member of the Board, David Wallace.

Marion Co. H. and A. Soc.	F. P. Johnson	Indianapolis.
Indianapolis Racing Ass'n	David Wallace	Indianapolis.

NINTH DISTRICT.

Member of the Board, W. T. Beauchamp.

Brazil	W. F. Hulett	Crawfordsville.
Terre Haute	W. F. Hulett	Crawfordsville.
Newton	Albert Van Velgen	Newton.
Kingman	A. H. Lindley	Kingman.
Covington	W. F. Hulett	Crawfordsville.
Cayuga	M. A. McDonald	West Lebanon.
Newport	M. A. McDonald	West Lebanon.
Dana Racing Ass'n	W. F. Hulett	Crawfordsville.
Riley	W. F. Hulett	Crawfordsville.
Vermillion Co. Ass'n	W. F. Hulett	Crawfordsville.
Bridgeton	W. F. Hulett	Crawfordsville.

TENTH DISTRICT.

Member of the Board, Oscar Hadley.

<i>Name of Fair.</i>	<i>Delegate.</i>	<i>Address.</i>
Danville.....	M. A. McDonald.....	West Lebanon.
Hendricks Co. Racing Ass'n.....	C. L. Thompson.....	Danville.
Crawfordsville.....	W. F. Hulett.....	Crawfordsville.
Lebanon.....	Lon Vartzt.....	Lebanon.

ELEVENTH DISTRICT.

Member of the Board, M. S. Claypool.

Muncie.....	C. H. Anthony.....	Muncie.
Portland.....	J. F. Graves.....	Portland.
Montpelier Racing Ass'n.....	C. W. Travis.....	Lafayette.

TWELFTH DISTRICT.

Member of the Board, W. M. Blackstock.

Boswell.....	C. W. Travis.....	Lafayette.
Lafayette.....	Jno. M. Cason.....	Lafayette.
Lafayette Racing Ass'n.....	C. W. Travis.....	Lafayette.
Warren Co. Fair and Athl. Ass'n.....	M. A. McDonald.....	West Lebanon.

THIRTEENTH DISTRICT.

Member of the Board, John L. Thompson.

Fairmount.....	John L. Thompson.....	Gas City.
Swayzee.....	John L. Thompson.....	Gas City.
Huntington.....	John L. Thompson.....	Gas City.
Marion Driving Ass'n.....	John L. Thompson.....	Gas City.
North Manchester.....	John L. Thompson.....	Gas City.

FOURTEENTH DISTRICT.

Member of the Board, Joseph Cunningham.

Kokomo Driving Park Ass'n.....	H. H. Leach.....	Kokomo.
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FIFTEENTH DISTRICT.

Member of the Board, C. B. Benjamin.

Bourbon.....	B. W. Parks.....	Bourbon.
Crown Point.....	Fred Wheeler.....	Crown Point.
Laporte.....	J. W. Bowell.....	Laporte.

SIXTEENTH DISTRICT.

Member of the Board, James E. McDonald.

<i>Name of Fair.</i>	<i>Delegate.</i>	<i>Address.</i>
Ft. Wayne.....	Wm F Myers.....	Ft. Wayne.
Angola	Clyde C. Carlin	Angola.
Kendallville	J. S Conlogue	Kendallville
Noble Co. Hort. Soc	Don K. Hitchcock.....	Kendallville.
Lagrange Agr and Hort. Ass'n	J. C. Grossman.....	Lagrange.

Respectfully submitted,

J. E McDONALD,
 DAVID WALLACE,
 M. A. McDONALD,

Committee.

Mr. Niblack, for the Committee on President's Address, made the following report:

To the Members of the Delegate State Board of Agriculture:

Gentlemen—Your committee to whom was referred the President's Address, beg leave to report that it is full and complete in all its parts and that it should be approved and its recommendations concurred in in every way by the Delegate Board.

The President's acknowledgment of the debt of obligation that the State Board of Agriculture owes to the Commercial Club and Merchants' Association, and to the business people and newspapers of Indianapolis, should be especially emphasized. The interests of the State Board of Agriculture and of the business people of Indianapolis are identical, and the measure of success that came to the last State Fair, brought about by the exertions of both, show that for time to come neither should ever be a prey upon the other.

One of the mottoes of the State Board of Agriculture should be, "Close relations with the business interests of the people and the newspapers of Indianapolis."

Respectfully submitted,

MASON J. NIBLACK,
 JOHN L. THOMPSON,
 SID CONGER,

Committee.

On motion of Mr. Niblack, seconded by Mr. Blackstock, the report of the committee was adopted.

Mr. Hadley, for the Auditing Committee, made the following report:

To the President and Members of the Delegate State Board of Agriculture:

Gentlemen—We, the undersigned Auditing Committee, respectfully report that we have carefully audited the books, accounts and papers of the Secretary and Treasurer of the Indiana State Board of Agriculture, and find them to be correct in all things, and recommend that the reports of said Secretary and Treasurer be approved.

Respectfully submitted.

OSCAR HADLEY,
JOHN TILSON,
E. S. TUELL,
Auditing Committee.

On motion of Mr. Mitchell, seconded by Mr. Wallace, the report of the Auditing Committee was adopted.

President Haines announced the next order of business to be the election of members of the Board for the Fifth, Sixth, Eighth, Ninth, Tenth, Eleventh, Twelfth and Thirteenth districts, and that no nominating speeches should be made.

After the announcement of the President the following nominations were made:

5th District—H. L. Nowlin	Lawrenceburg.
6th District—Knode Porter	Hagerstown.
8th District—Sid Conger	Shelbyville.
9th District—{ Charles R. Duffin	Terre Haute.
{ Geo. W. Jessup	Rockville.
10th District—Oscar Hadley	Plainfield.
11th District—M. S. Claypool	Muncie.
12th District—C. W. Travis	Lafayette.
13th District—John L. Thompson	Gas City.

The President appointed the following members to act as tellers: Robert Mitchell, Wm. Risk, W. H. Blackstock.

On motion of Mr. Creigmile of Osgood, duly seconded, the Secretary was instructed and authorized to cast the ballot of the entire body for the nominees for the Fifth, Sixth, Eighth, Tenth, Eleventh, Twelfth and Thirteenth districts, there being no opposition to the nominations from these districts.

In accordance with the motion of Mr. Claypool, the Secretary cast 84 votes for Mr. H. L. Nowlin for member of the Board for the Fifth District for the ensuing two years. Mr. Nowlin having received all the votes cast was declared duly elected a member of the Board for the Fifth district for the ensuing two years.

Thereupon the Secretary cast 84 votes for Knode Porter for member of the Board for the Sixth District for the ensuing two years and he having received all the votes cast, was declared duly elected a member of the Board for the Sixth District for the ensuing two years.

Thereupon the Secretary cast 84 votes for Sid Conger for member of the Board for the Eighth District and he having received all the votes cast, the President declared him duly elected member of the Board from said district for the ensuing two years.

Thereupon the President instructed the members to prepare their ballots for the election of the Ninth District and announced that the names of Charles R. Duffin and Geo. W. Jessup had been placed in nomination, and ballot was taken for the election of a member from said Ninth District, which resulted as follows: Total number of votes cast, 81; necessary to a choice, 41. Of these Mr. Duffin received 58 and Mr. Jessup 23. Upon the announcement of the result of the ballot, Mr. Jessup moved that the election of Mr. Duffin be made unanimous, which motion was duly seconded and carried, and Mr. Duffin was declared duly elected a member of the Board for the Ninth District for the ensuing two years.

Thereupon the Secretary cast 84 votes for Mr. Oscar Hadley for member of the Board for the Tenth District for the ensuing two years, and the President declared him duly elected.

Thereupon the Secretary cast 84 votes for Mr. M. S. Claypool for member of the Board for the Eleventh District, and the President declared him duly elected a member of the Board for the Eleventh District for the ensuing two years.

Thereupon the Secretary cast 84 votes for C. W. Travis for member of the Board for the Twelfth District, and the President declared him duly elected a member of the Board for said district for the ensuing two years.

Thereupon the Secretary cast 84 votes for Mr. John L. Thompson for member of the Board for the Thirteenth District, and the President declared him duly elected a member of the Board for said district for the ensuing two years.

There being no further business brought before the Delegate Board, the President declared the meeting adjourned, sine die.

JOHN C. HAINES,
President.

CHARLES DOWNING,
Secretary.

January 4, 1905.

The Indiana State Board of Agriculture met in the office of the Secretary on January 4, 1905, for the purpose of closing up the business of the Board for the past year before the reorganization of a new Board.

President Haines called the meeting to order, and upon the call of the roll all the officers and members of the Board responded to their names.

Mr. Haines made a verbal report on the purchase of show cases and exhibits made from the Indiana Commission of the St. Louis Exposition. He also made a few remarks on the successes of the Board for the past year and thanked the members for their support during the past year.

On motion of Mr. Hadley, seconded by Mr. Claypool, the purchases made at St. Louis by the special committee appointed for that purpose was ratified and confirmed.

There being no further business to be brought before the Board at this meeting, on motion of Mr. McDonald, seconded by Mr. Claypool, the Board adjourned sine die.

JOHN C. HAINES,
President.

CHARLES DOWNING,
Secretary.

NEW BOARD MEETING.

January 4, 1905.

The hold-over members of the Indiana State Board of Agriculture and the newly elected members of the Board met in the Secretary's office on January 4th for the purpose of reorganizing the Board for the year 1905.

On motion of Mr. McDonald, duly seconded, John C. Haines was elected temporary chairman of the meeting and Chas. Downing was elected temporary secretary.

The chairman announced that the election of officers for the ensuing year was in order.

Mr. Conger placed in nomination the name of Mason J. Niblack of Vincennes for President for the ensuing year, which nomination was seconded by John L. Thompson.

On motion of Mr. McDonald, seconded by a number of the members, Mr. Niblack was elected President of the Board for the ensuing year by acclamation.

The chairman thereupon declared Mr. Niblack duly elected as President of the Board for the coming year and assumed the duties of President.

On motion of Mr. Conger, seconded by Mr. Thompson, it was decided to take a uniform ballot for candidate for Vice-President. The ballot being taken, resulted as follows: Oscar Hadley received 1 vote; David Wallace received 1 vote; John Tilson received 1 vote.

On motion of Mr. Claypool, seconded by Mr. Thompson, the Secretary was instructed to cast 15 votes for Mr. John Tilson for Vice-President for the ensuing year, which was accordingly done, and Mr. Tilson was declared duly elected Vice-President for the ensuing year.

On motion of Mr. McDonald, seconded by Mr. Wallace, the President was authorized to cast 15 votes for Chas. Downing for Secretary for the ensuing year, which was accordingly done and he was declared duly elected Secretary for the ensuing year.

On motion of Mr. Tilson, seconded by Mr. Claypool, the President was instructed to cast 15 votes for J. W. Lagrange for Treasurer for the ensuing year, which was accordingly done and Mr. Lagrange was declared duly elected Treasurer of the Board for the ensuing year.

On motion of Mr. Claypool, seconded by Mr. Wallace, the President was authorized to cast 15 votes for E. H. Peed of New Castle for Superintendent for the ensuing year, which was accordingly done and Mr. Peed was declared duly elected Superintendent for the ensuing year.

On motion of Mr. Hadley, seconded by Mr. Haines, the President was authorized and empowered to select an Executive Committee for the ensuing year.

On motion of Mr. Tilson, seconded by Mr. Haines, the President was authorized and empowered to name superintendents for the several departments of the fair for 1905.

On motion of Mr. Wallace, duly seconded, the settlement of the claims of C. N. Williams & Co., and the Central Trust Company, were referred to the Executive Committee to be hereafter appointed.

On motion all matters pertaining to legislation affecting the Board's interest were referred to the Executive Committee.

On motion of Mr. Tilson, seconded by Mr. Wallace, the matter of resoling the race track was referred to the Executive Committee.

On motion of Mr. Claypool, seconded by Mr. Thompson, the President and Secretary were authorized to make a contract with the old telephone company for the use of the small stand occupied by the company during the last fair.

On motion of Mr. Hadley, the communication from the Secretary of the American Breeders' Association was referred to the Executive Committee.

Mr. David Wallace moved that the Board proceed at once to recommend to the Governor for appointment a suitable person to fill the vacancy in the Board of Trustees of Purdue University, caused by the death of Mr. W. A. Banks of Laporte, and that the Hon. A. C. Harris of Indianapolis be recommended to fill the vacancy, and that the Secretary of the Board be directed to certify such recommendation to the Governor of Indiana, which motion was seconded by John L. Thompson and other members and, on being put to a vote, was declared unanimously carried.

Thereupon the President of the Board declared Mr. Harris duly recommended to the Governor for appointment to fill the vacancy on said Board of Trustees of Purdue University, caused by the death of Mr. Banks, and the Secretary of the Board was directed to certify said recommendation to the Governor of Indiana.

On motion of Mr. Haines, seconded by Mr. Tuell, all unfinished business relating to the Board was referred to the Executive Committee.

On motion, the Board adjourned.

MASON J. NIBLACK,
President.

CHARLES DOWNING,
Secretary.

February 15, 1905.

The Indiana State Board of Agriculture met pursuant to the call of the President on Wednesday, February 15, 1905, at 10 o'clock a. m., in the rooms of the Board in the State House.

There were present: J. C. Haines, Rockport; Mason J. Niblack, Vincennes; Ed. S. Tuell, Corydon; H. L. Nowlin, Lawrenceburg; Knobe Porter, Hagerstown; David Wallace, Indianapolis; Sid Conger, Shelbyville; Oscar Hadley, Danville; M. S. Claypool, Muncie; Chas. W. Travis, Lafayette; John L. Thompson, Gas City; Jos. Cunningham, Peru; C. B. Benjamin, Leroy; J. E. McDonald, Ligonier.

Mr. Chas. R. Duffin of Terre Haute was absent.

There were also present: Chas. Downing, Secretary; J. W. Lagrange, Treasurer; E. H. Peed, Superintendent.

President Niblack called the meeting to order and announced that the meeting was called for the purpose of revising the premium list for the coming fair.

Upon motion of Mr. McDonald, seconded by Mr. Tilson, the dates of the fair for 1905 were fixed for September 11th to 15th, inclusive.

On motion of Mr. Cunningham, duly seconded, the Board proceeded to revise the premium list.

A committee from the labor union organization appeared before the Board and requested that all carpenter work of every character that was to be done on the grounds during the coming season be done by union labor. After hearing the remarks of the committee, the whole matter was referred to the Executive Committee with power to act.

The President appointed Messrs. Haines, Thompson and Cunningham, Committee on Salaries and Fees for the coming year.

On motion of Mr. Claypool, seconded by Mr. Travis, the rates for the use of the grounds and track were fixed for the year as follows:

For the use of track and grounds, \$100.00 per day.

For the use of ground and grand stand, \$75.00 per day.

For the use of grounds without grand stand and track \$50.00 per day.

The rates for training horses were fixed as follows:

For stables south of track, \$2 for one horse, per month.

For stables north of grand stand, \$2 per month for one horse.

For stables north of track, \$1.50 per month for one horse.

On motion of Mr. Claypool, seconded by Mr. Travis, the Board authorized the duplication of all special prizes offered by breeders' associations up to \$500, the classification and arrangement of the prizes to be subject to the approval of the Executive Committee.

On motion of Mr. Thompson, seconded by Mr. Tilson, D. B. Winchester was employed as custodian of the fair grounds on the same terms and conditions as last year.

Mr. Haines, from the Committee of Fees and Salaries, reported the following:

Which report was concurred in by the Board.

On motion it was ordered that the complimentary tickets for the year of 1905 be the same as they were last year.

On motion the request of Mr. Wishard for power of attorney was denied by the Board.

On motion of Mr. McDonald, seconded by Mr. Hadley, it was ordered by the Board that whatever amount was paid to Mr. Wishard for expenses in representing the Board's interest in the claim against the United States Government shall be paid with the understanding that it shall be a credit on his fees in said matter and that the amount paid to him shall not exceed \$100 for this purpose.

On motion the following claims were allowed:

The Banner Publishing Company.....	\$193 50
H. L. Nowlin.....	10 00

On motion the Board took a recess until tomorrow morning at 10 o'clock.

February 16, 1905, the Board reconvened with all the members present except Mr. Duffin.

The work of revising the list was again taken up and completed, and the Secretary was authorized to publish and have printed 15,000 premium lists for the coming year.

Mr. Benjamin endorsed and moved the adoption of the following resolution:

Which resolution was unanimously adopted.

Mr. J. W. Lagrange, Treasurer, presented a bond for the ensuing year, which was approved by the Board, and which reads as follows:

Know all men that we, Jasper W. Lagrange as principal, and William H. Lagrange, Isaac N. Crowell and E. C. Miller, as sureties, are bound unto the Indiana State Board of Agriculture in the penal sum of twenty thousand dollars (\$20,000), for the payment of which we jointly and severally bind ourselves, our heirs, executors and administrators.

Sealed and dated this 14th day of February, 1905.

The condition of the above obligation is, that if the said Jasper W. Lagrange shall perform his duties as Treasurer of the Indiana State Board of Agriculture and shall pay over all money coming into his hands as such Treasurer, then this bond to be void, else to remain in full force.

J. W. LAGRANGE.
W. H. LAGRANGE.
I. M. CROWELL,
E. C. MILLER.

State of Indiana, County of Johnson—ss:

This day personally appeared the above-named Jasper W. Lagrange, William H. Lagrange, Isaac M. Crowell and E. C. Miller and acknowledged the execution of the above bond.

Witness my hand and notarial seal this 14th day of February, 1905.

ORAL S. BARRETT,
Notary Public.

My commission expires September 3, 1905.

On motion of Mr. Claypool, seconded by Mr. Cunningham, the Board authorized the duplication of any prizes that were offered by the Indiana State Dairy Association.

On motion of Mr. Thompson, seconded by Mr. Cunningham, all printing and advertising matter was referred to the Secretary with power to make contracts for same.

On motion of Mr. McDonald, seconded by Mr. Travis, the matter of resoiling the race track was referred to the Executive Committee with power to act.

On motion of Mr. Cunningham, seconded by Mr. Tilson, all unfinished business of the Board was referred to the Executive Committee.

On motion the Board adjourned to meet on the call of the President.

MASON J. NIBLACK,
President.

CHARLES DOWNING,
Secretary.

MEETING OF EXECUTIVE COMMITTEE, APRIL 6, 1905.

Pursuant to the call of the President, the Executive Committee of the Indiana State Board of Agriculture met in the office of the Secretary in the State House on April 6, 1905. There were present Hon. Mason J. Niblack, President, and Charles Downing, Secretary, and Messrs. Conger, Claypool, Wallace and Hadley, members of the Executive Committee.

The meeting was called to order by the President. A communication from Mr. Theo. Stempfel, secretary of the North American Gymnastic Union, regarding the use of the fair grounds and buildings for the meeting of said union June 21 to 24, 1905, was read and discussed by the Board.

On motion of Mr. Conger, seconded by Mr. Wallace, the Secretary of the Board was instructed to notify the managers of the North American Gymnastic Union that they would be required

to give bond in the sum of \$5,000 to the Board, conditioned that said union would put the grounds and buildings in the same condition they are now in after their meeting of June 21-24, which motion was carried.

On motion of Mr. Hadley, seconded by Mr. Wallace, a committee composed of Messrs. Niblack, Claypool and Downing was appointed to investigate the cost of resoiling the mile track and report the same to the Executive Committee at its next meeting.

On motion of Mr. Claypool, seconded by Mr. Wallace, the Secretary was instructed to investigate the cost of turn-stiles that were used at the World's Fair in St. Louis and if same could be purchased.

On motion of Mr. Wallace, seconded by Mr. Hadley, Scott & Scott, attorneys, were allowed \$20 for legal services in connection with the application for a loan to the Union Trust Company, and Elliott & Littleton were allowed \$200 for legal services in connection with the litigation with Mrs. Theresa Smith.

On motion of Mr. Hadley, seconded by Mr. Wallace, a vote of thanks was given to the Hon. A. C. Harris for services rendered the Board in preparing bills for the last Legislature.

Mr. Conger made the following motion: "I move that the Secretary be instructed to offer a tract of land from the State Fair Grounds to Purdue University for experimental purposes for the benefit of the farmers of Indiana and visitors to the State Fair," which motion was seconded, and upon being put to a vote was lost.

On motion of Mr. Hadley, seconded by Mr. Wallace, the claims covered by warrants 1893 to 1917 were allowed, and the Secretary was authorized to draw warrants for same.

On motion the Board took a recess until tomorrow morning.

MASON J. NIBLACK,
President.

CHARLES DOWNING,
Secretary.

MEETING OF EXECUTIVE COMMITTEE, APRIL 7, 1905.

On Friday, April 7th, the Executive Committee of the Indiana State Board of Agriculture reconvened, all the members being present.

Mr. Phinney presented a proposition for the Duss Band as an attraction for the coming State Fair.

On motion of Mr. Claypool, seconded by Mr. Wallace, the Secretary was instructed to contract with Mr. Barnes of Chicago for five vaudeville acts for the sum of \$1,650, to be given during the coming State Fair.

On motion of Mr. Conger, seconded by Mr. Claypool, it was ordered that C. N. Williams & Co. be paid \$50 in full of the demands by way of compromise of claim presented by said company.

On motion of Mr. Conger, seconded by Mr. Wallace, it was ordered that no repairs be made on the grounds or buildings this year except those absolutely necessary.

On motion the committee adjourned to meet on the call of the President.

MASON J. NIBLACK,
President.

CHARLES DOWNING,
Secretary.

MEETING OF EXECUTIVE COMMITTEE, MAY 24, 1905.

The Executive Committee of the Indiana State Board of Agriculture met in the office of the Secretary of the Board on May 24, 1905. The President, Mr. Niblack, called the meeting to order, and upon roll call all of the members responded to their names.

Messrs. Kipp, Lieber, Stempfel and Vonnegut presented to the committee the matter of fixing up the grounds, decorating the buildings with flags, etc.

Upon motion of Mr. Wallace, duly seconded, the custodian was instructed to repair the entrance to the fair grounds, the chairs in the grandstand and to whitewash the fences on the south of the grounds and around the railroad loop.

Mr. Fred Phinney presented a proposition to play the Duss Band at the Indiana State Fair for the sum of \$3,000.

Mr. Millikan, representing Parke, Davis & Co., offered to furnish all the disinfectant material required to properly disinfect the fair grounds, stables, etc., during the coming Indiana State Fair, and to do all the labor necessary, provided Parke, Davis & Co. should have the exclusive privilege of disinfectant advertising on the fair grounds during the fair, which proposition the Board accepted.

It was ordered by the committee that no advertisements be placed on buildings, except with the consent of the superintendents of the departments in control of same.

Mr. Arthur White, representing the United States Lithographing Company, submitted sketches for posters with prices, as follows:

Sixteen sheets, 2 colors.....	\$ 32 each
One sheet, 3 colors.....	35 00 per 1,000
Hangers	65 00 per 1,000

These posters to be printed on 80-pound book paper and the hangers to be printed on 100-pound paper.

On motion the Board took a recess until tomorrow morning.

MEETING OF EXECUTIVE COMMITTEE, MAY 25, 1905.

The Executive Committee reconvened at the Secretary's office on May 25, 1905.

All the members were present.

On motion of Mr. Claypool, seconded by Mr. Conger, the Secretary was authorized to select and purchase posters and hangers for the coming fair.

Mr. Wallace moved that the Premier Automobile Company be allowed the use of the half-mile track for the purpose of making a thousand mile run, beginning at 5 o'clock Saturday evening and continuing Sunday, which motion was duly seconded, and upon being put to a vote was lost.

Mr. Wallace moved that under no circumstances shall automobiles be allowed on the race track, which motion was seconded by Mr. Niblack, and on being put to a vote was lost.

On motion of Mr. Wallace, seconded by Mr. Conger, the bid of Mr. Wheelock for his Indian Band was accepted.

On motion of Mr. Claypool, seconded by Mr. Wallace, the claim of the Board against the United States Government was referred to the President and Secretary to adjust, with power to act.

On motion of Mr. Conger, seconded by Mr. Hadley, the President and Secretary were appointed a committee to work out the details of the bond issue to be hereafter made by the Board and that they present same to the full Board at its next meeting to be held in Lafayette, June 6, 1905.

On motion, the Board adjourned to meet June 6, 1905, at the Lahr House in Lafayette, Indiana.

MASON J. NIBLACK,
President.

CHARLES DOWNING,
Secretary.

MEETING OF BOARD, TUESDAY JUNE 6, 1905.

The Indiana State Board of Agriculture met at the Lahr House in the city of Lafayette, Indiana, on Tuesday, June 6, 1905, at 2 o'clock p. m., pursuant to the following call sent to each member of the Board by the Secretary:

The President directs me to notify you that there will be a meeting of the Board on the 6th day of June, 1905, at 2 o'clock p. m., at the Lahr House in the city of Lafayette, Indiana, to consider the matter of issuing

bonds for the purposes mentioned in and under the authority given the Board by the act of the Legislature, approved February 17, 1905, as well as any other business which may come before the Board.

Please arrange to attend the meeting promptly at the time and place mentioned.

The President, Hon. Mason J. Niblack, being present, called the meeting to order and upon roll call the following members responded to their names, viz.: Mason J. Niblack, John L. Thompson, Oscar Hadley, David Wallace, Joseph Cunningham, Sid Conger, H. L. Nowlin, Knobe Porter, John Tilson, C. B. Benjamin, Chas. W. Travis, M. S. Claypool, E. S. Tuell and John C. Haines.

The following named members were absent: Chas. R. Duffin and Jas. E. McDonald.

The Secretary, Charles Downing, was also present.

There being more than a quorum of the members present, the President declared the meeting open for the transaction of business.

On motion of Mr. Travis, seconded by Mr. Thompson, it was ordered by the Board that the actual expenses of the members in attendance on this meeting be paid by the Board, and the Secretary was directed to draw warrants in favor of the members for same.

Mr. H. L. Nowlin introduced and moved the adoption of the following resolution, which was seconded by Mr. Hadley, to wit:

Be it resolved, By the Indiana State Board of Agriculture, that for the purpose of paying off existing indebtedness now outstanding for a part of the real property of the Board, known as the State Fair Grounds, near Indianapolis, Marion County, Indiana, and for the purpose of erecting and maintaining proper and necessary buildings and improvements to enable the said Board at all times to carry out, perform and discharge its duties in giving State Fairs, and other purposes, and pursuant to an act entitled, "An act for the relief of the Indiana State Board of Agriculture, authorizing it to borrow money to pay off its existing indebtedness and for other purposes, and to repeal so much of an act concerning the State Board of Agriculture, approved April 14th, 1881, as is now in force, being sections 2796, 2797 and 2798 in Burns' Annotated Indiana

Statutes of the revision of 1901, and other matter properly connected therewith and providing for an emergency," approved February 17, 1905, and fully set forth at pages 17, 18 and 19, Acts of Indiana, 1905, bonds of the said Indiana State Board of Agriculture be issued in the sum of eighty thousand dollars (\$80,000.)

Further, that said bonds shall be of the denomination of \$500 each, with interest coupons at $3\frac{1}{2}$ per cent. per annum, principal and interest both payable at; interest payable semi-annually and as evidenced by the coupons.

Said bonds shall be numbered from 1 to 160 consecutively, and dated October, 1905, and signed by the President and Secretary and attested by the corporate seal of the Board. The principal of said bonds shall be payable as follows:

Bonds 1 to 40, inclusive, shall be payable at any interest-bearing period at the option of the said Board after the expiration of nine years from date and until the expiration of twenty years from date, at which time said bonds shall become due and payable in full, and shall be known as the first series.

Bonds 41 to 80, inclusive, shall be payable at any interest-bearing period, at the option of said Board after the expiration of ten years from date and until the expiration of twenty years from date, at which time said bonds shall become due and payable in full and shall be known as the second series.

Bonds 81 to 120, inclusive, shall be payable at any interest-bearing period, at the option of said Board after the expiration of eleven years from date and until the expiration of twenty years from date, at which time said bonds shall become due and payable in full and shall be known as the third series.

Bonds 121 to 160, inclusive, shall be payable at any interest-bearing period, at the option of said Board after the expiration of twelve years from date until the expiration of twenty years from date, at which time said bonds shall become due and payable in full, and shall be known as the fourth series.

Be it further resolved, That for the purposes of securing the payment of such bonds the President and Secretary of said Board are hereby authorized, empowered and directed to execute a mortgage on the real estate owned by the Board, known as the Indiana State Fair Grounds, situate in Marion County, Indiana, and described as follows, to wit:

Part of the southwest fractional quarter and part of the southeast quarter, all in section eighteen (18), township sixteen (16), north range four (4) east, in Marion County, State of Indiana, described as follows:

Beginning at the southwest corner of said section and running east with the south line thereof twenty-six hundred and eighty

and twenty-five hundredths (2,680.25), feet; thence north parallel to the west line of said section thirteen hundred and twenty feet (1,320); thence west parallel to the south line of said section twenty-six hundred and eighty and twenty-five hundredths (2,680.25) feet to the west line of said section; thence south with said west line thirteen hundred and twenty feet (1,320) to the place of beginning, except a strip forty (40) feet wide on the west side of said section, sold to the Louisville, New Albany and Chicago Railroad Company, containing clear of said railroad strip eighty (80) acres.

Also part of the southwest fractional quarter and part of the southeast quarter, all in section eighteen (18), township sixteen (16), north range four (4) east, in said county and said State, described as follows:

Beginning on the west line of said section at a point thirteen hundred and twenty (1,320) feet north of the southwest corner thereof, and running east parallel to the south line of said section, twenty-six hundred and eighty and twenty-five hundredths (2,680.25) feet; thence south parallel to the west line of said section thirteen hundred and twenty (1,320) feet to the south line of said section; thence east with said south line to the center of Fall Creek, thence northeastwardly with the center of Fall Creek to the west line of the Peru Railroad right of way, now called the Lake Erie and Western Railway; thence northwardly with the west line of said right of way to the north line of the south half of said section eighteen (18); thence west with the north line of the south half of said section to the northwest corner of the southwest fractional quarter of said section; thence south with the said west line of said section eighty rods more or less to the place of beginning; except a strip forty (40) feet wide on the west side of said section heretofore sold to the Louisville, New Albany and Chicago Railroad Company, containing clear of said railroad strip one hundred and thirty-four (134) acres, more or less, situate in Marion County, in the State of Indiana.

and in favor of the Central Trust Company of Indianapolis, Indiana, trustee, in the sum of eighty thousand dollars (\$80,000.00).

The said mortgage to be signed by said President and Secretary and attested by the corporate seal of the board.

And be it further resolved, That the President of the Indiana State Board of Agriculture under and by the direction of said Board shall sell all of said bonds, or so much or so many of said bonds from time to time as shall be deemed proper and for the best interests of said Board; the balance of said bonds, if any, to remain in the treasury of said Board as the property of said Board until another amount or lot of them shall be directed to be sold by said Board.

After some discussion upon the resolution a yeas and nays vote was ordered to be taken, which resulted as follows:

Yeas—Messrs. Thompson, Niblack, Hadley, Wallace, Cunningham, Conger, Nowlin, Porter, Benjamin, Travis, Claypool, Tuell and Haines. Nays—None.

The vote in favor of the adoption of the resolution being unanimous, the President declared it adopted.

On motion of Colonel Wallace, seconded by Mr. Thompson, a vote of thanks was given in favor of Hon. A. C. Harris for his hospitality and entertainment of the Board at the Lafayette Club.

On motion of Mr. Niblack, seconded by Colonel Wallace, a vote of thanks was extended to Mr. Chas. W. Travis for his courteous treatment of the members of the Board while at Lafayette.

There being no further business, on motion made and seconded, the Board adjourned, to meet on the call of the President.

MASON J. NIBLACK,
President.

CHARLES DOWNING,
Secretary.

MEETING OF EXECUTIVE COMMITTEE, JULY 20, 1905.

Pursuant to the call of the President, the Executive Committee of the Indiana State Board of Agriculture met in the office of the Secretary in the State House.

All the members were present.

The President called the meeting to order and proceeded to business.

Messrs. Dugan & Morgan presented a proposition to furnish policemen during the coming Indiana State Fair at \$2.25 per man and detectives for \$2.50, which proposition was accepted by the committee.

Mr. A. W. Wishard appeared before the Board and informed the Board as to the condition of its claim against the United States Government.

Mr. W. A. Holt appeared before the Board in the interest of the Indianapolis Racing Association.

On motion of Mr. Wallace, duly seconded, the bid of the Indianapolis Military Band to furnish a band of 20 men for \$360 during the fair was accepted.

On motion of Mr. Claypool, duly seconded, the matter of attending the reciprocity conference to be held in Chicago, August 16th and 17th, was referred to the President and Secretary, and the Executive Committee were appointed delegates to said conference.

On motion of Mr. Claypool, duly seconded, the claims covered by warrants 1953 to 1982 were allowed.

On motion of Mr. Hadley, seconded by Mr. Conger, the Secretary was authorized to purchase 350 chairs for the boxes in the grandstand and also 50 settees of the kind heretofore purchased by the Board.

On motion of Mr. Wallace, duly seconded, the Secretary was instructed to get prices on the construction of the Monon Line fence and the fence around the street-car loop.

On motion of Mr. Hadley, Mr. Conger was instructed to have the doors to the chicken coops rearranged and repaired.

On motion of Mr. Niblack, duly seconded, the matter of buying lumber from the Indianapolis Racing Association and adjusting the claim of the Board against said association was referred to Messrs. Conger and Hadley for settlement with power to act.

On motion the committee adjourned to meet at the call of the President.

MASON J. NIBLACK,
President.

CHARLES DOWNING,
Secretary.

MEETING OF EXECUTIVE COMMITTEE, AUGUST 8, 1905.

On August 8, 1905, the Executive Committee of the Indiana State Board of Agriculture met pursuant to the call of the President at the office of the Secretary in the State House. The President called the meeting to order and upon roll call all the members responded to their names.

The managers of the Indiana Farmer Company presented an application for space for a building to be known as the Indiana Farmer Building, and upon motion of Mr. Conger, seconded by Mr. Claypool, the Indiana Farmer Company was allowed to build a building upon lot 106 with the understanding and agreement that the building so built shall be removed to lot 115 after the fair of 1905.

On motion, duly seconded, it was ordered that a warrant be drawn for \$100 in favor of Mr. A. W. Wishard for expenses to Washington, D. C., to make an effort to procure the money on the claim allowed this Board by the authorities at Washington at the earliest time possible, said amount of \$100 to be deducted from the fee of Mr. Wishard in presenting said claim.

On motion of Mr. Wallace, seconded by Mr. Conger, the proposition of Mr. Zeigler of Cincinnati to put on a night attraction at the coming State Fair was not accepted.

On motion of Mr. Conger, seconded by Mr. Wallace, the Secretary was authorized and instructed to provide a lunch during the fair for the members of the Board from 11 o'clock a. m. until 2 o'clock p. m.

Mr. W. H. Hawkins appeared before the Board and made a proposition to furnish police service during the fair.

On motion of Mr. Hadley, seconded by Mr. Conger, the Indiana Farmer Company was given the right to use the ground west of the ground now occupied by it for experimental purposes. On motion of Mr. Wallace, seconded by Mr. Claypool, the Secretary was in-

structed to notify persons using or occupying stalls at the fair grounds for training horses to vacate them one week before the fair, unless owners have entries in classes or purses.

The bids of Thos. H. New, Charles Bailey and Hiram W. Miller for straw were opened, and the contract was awarded to Hiram W. Miller for 60 to 100 tons of tight baled new wheat straw at \$5 per ton, on motion of Mr. Hadley, seconded by Mr. Wallace.

On motion of Mr. Wallace, duly seconded, the Board adjourned, and the committee took a recess until tomorrow morning.

MASON J. NIBLACK,
President.

CHARLES DOWNING,
Secretary.

MEETING OF EXECUTIVE COMMITTEE AUGUST 9, 1905.

On August 9th the committee reconvened, all the members being present.

On motion of Mr. Conger, seconded by Mr. Wallace, the President was authorized and empowered to employ an attorney to draft trust mortgage bonds, etc., preparatory to issuing bonds.

The committee then visited the fair grounds. After returning from the fair grounds the committee adjourned on motion to meet at the call of the President.

MASON J. NIBLACK,
President.

CHARLES DOWNING,
Secretary.

MEETING OF BOARD SEPTEMBER 9, 1905.

The Indiana State Board of Agriculture met pursuant to the following call of the President:

To Members of Indiana State Board of Agriculture:

The President has directed me to notify you that there will be a meeting of the Indiana State Board of Agriculture on Saturday morning.

September 9, 1905, at 10 o'clock a. m., at the Administration Building, on the Fair Grounds.

Please be in attendance promptly, as business of importance will be transacted.

CHARLES DOWNING,

Secretary.

The meeting was called to order by the President, Mr. Niblack. The roll was called by the Secretary and all the members responded to their names.

The President announced that the purpose of the meeting was to discuss resolutions governing the contemplated bond issue.

J. W. Lagrange, Treasurer of the Board, made a statement as to the indebtedness of the Board, which amounted to \$42,725.77.

After some discussion, Mr. Claypool moved the adoption of the following resolution:

Which resolution was seconded by Mr. Tuell. The roll was called and the ayes and nays were taken upon the resolution. The following members voted for the resolution:

J. C. Haines, Mason J. Niblack, Ed S. Tuell, John Tilson, H. L. Nowlin, Knode Porter, David Wallace, Sid Conger, Charles R. Duffin, Oscar Hadley, M. S. Claypool, Charles W. Travis, John L. Thompson, Joseph Cunningham, C. B. Benjamin, J. E. McDonald.

Thereupon the President declared the resolution unanimously adopted.

There being no further business the Board adjourned to meet on call of the President.

MASON J. NIBLACK,

President.

CHARLES DOWNING,

Secretary.

MEETING OF BOARD, FAIR GROUNDS, SEPTEMBER 15, 1905.

The Indiana State Board of Agriculture met in its room in the Administration Building on the fair grounds September 15, 1905, at 9 o'clock a. m. Upon roll call all of the officers and members answered to their names.

On motion of Mr. Conger, seconded by Mr. Thompson, it was voted that it was the sense of the Board that if there was sufficient money on hand after the settlement of all premiums and the expenses of the Board were paid, that the note of Mrs. Theresa H. Smith, due October 1st, be paid.

On motion of Mr. Wallace, seconded by Mr. Thompson, the Board ordered that no bonds be issued for any purpose at least until the January meeting.

Mr. Conger offered the following resolution:

Whereas, The receipts of the Indiana State Board of Agriculture from all sources is not sufficient to pay off and discharge the premiums awarded at the fair of 1905; and the expenses of the fair, to make certain needed improvements on said grounds, and to pay off and discharge the indebtedness due Theresa H. Smith on account of the purchase of part of the fair grounds, amounting at this time to \$17,604.58; and,

Whereas, It is impossible to sell the bonds of the Board to advantage at this time by reason of the fact that there remains a mortgage upon part of said fair grounds, securing a note of \$16,530.13, which is not due until October 1, 1906, and which cannot be paid and satisfied at this time; therefore, be it

Resolved, That the President and Secretary of the Indiana State Board of Agriculture be and they are hereby authorized and empowered to borrow a sufficient sum of money to pay off and discharge the amount now due Theresa H. Smith for the purchase of said fair grounds and to make certain needed improvements on said grounds. And said President and Secretary are authorized to execute notes evidencing said debt and to secure the sum so borrowed and do all things else necessary to carry out the purpose and intent of this resolution.

Which was seconded by Mr. Thompson, and upon being put to a vote was unanimously adopted.

On motion of Mr. Conger, seconded by Mr. Wallace, the Secretary and Treasurer were instructed to send a statement of the condition of the Board's finances to each member by the 1st of October, 1905.

On motion of Mr. Tilson, duly seconded, all unfinished business and details of settlement of the claims connected with the fair was referred to the Executive Committee with power to act.

On motion of Mr. Thompson, duly seconded, a vote of thanks was given to the President of the Board for his courteous treatment and for the success of the fair.

On motion of Mr. Hadley, duly seconded, the following resolution was adopted:

Parke, Davis & Co. through diligent application of their famous Kreso Disinfectant, without expense to the Board, having contributed to the comforts of our patrons in attendance and the healthfulness of stock on exhibition during the 1905 fair with the following results—

- (a) No disease reported among the animals;
- (b) Comparative freedom of offensive odor from closets;
- (c) Absence of flies and disagreeable smell in stock stables;

Therefore, this Board desires and hereby tenders sincere thanks to Parke, Davis & Co. for their efficient work during the successful exhibition just closed.

On motion of Mr. Thompson the Board adjourned.

MASON J. NIBLACK,
President.

CHARLES DOWNING,
Secretary.

MEETING OF EXECUTIVE COMMITTEE OCTOBER 2, 1905.

The Executive Committee of the Indiana State Board of Agriculture met, pursuant to the call of the President, on October 2, 1905, in the office of the Secretary at the State House. The meeting was called to order by the President and all the members responded to their names upon roll call.

On motion of Mr. Hadley, seconded by Mr. Wallace, the sum of \$140 was authorized to be deducted from the bill of the Indianap-

olis Racing Association, on the condition that the racing association would surrender the liens now held by it upon the fair grounds. The roll was called and Messrs. Hadley, Wallace and Claypool voted yea. Mr. Conger voted nay. Thereupon the President declared the motion carried.

On motion, duly seconded, the claims represented by warrants 2131 to 2424, being the expenses of the fair, were examined and allowed by the committee.

Mr. W. G. Oliver appeared before the Board and made a proposition to loan the Board \$20,000 for one year at 4 per cent. interest, taking a mortgage to secure the same, which proposition was rejected.

The committee took a recess until tomorrow morning.

MASON J. NIBLACK,
President.

CHARLES DOWNING,
Secretary.

MEETING OF EXECUTIVE COMMITTEE, OCTOBER 3, 1905.

On October 3d the Executive Committee reconvened. The meeting was called to order by the President. All the members were present.

On motion of Mr. Conger, seconded by Mr. Claypool, it was determined by the committee to borrow \$14,000 for ten days from the Columbia National Bank for the purpose of meeting the expenses of the fair and paying the claims allowed on yesterday. The President and Secretary were authorized to sign notes securing the payment of same.

On motion the Board adjourned to meet on the call of the President.

MASON J. NIBLACK,
President.

CHARLES DOWNING,
Secretary.

INDIANA STATE FAIR, 1904.

The following is a complete list of all awards made at the Indiana State Fair for 1904:

SPEED PROGRAM.

M. S. CLAYPOOL, Muncie, Superintendent.
ROBERT N. NEWTON, Yorkville, Ill., Starting Judge.

C. W. TRAVIS, Lafayette,	}	Judges.
H. P. GENTRY, Bloomington,		
W. W. MORGAN, Crawfordsville,		

STERLING R. HOLT, Indianapolis,	}	Timers.
C. H. ANTHONY, Muncie,		
O. L. BOOR, Muncie,		

CHARLES DOWNING, Clerk of Course.

RESULTS AND AWARDS.

TUESDAY, SEPTEMBER 13.

2:30 Trot—Purse \$500—Divided \$250, \$125, \$75 and \$50.

John Thomas, gr. g., by Kellar Thomas—M. H. Reardon, Indianapolis, Ind.....	1	12	1	1
The Clown, br. g., by Eagle Bird—H. A. Bell, Louisville, Ky.....	2	1	3	3
Edna O, br. m., by Truman's Brother—W. W. Offutt, Rushville, Ind.....	4	2	2	2
Nashville, blk. g., by Candidate—William Gerst, Nashville, Tenn.....	3	3	9	4

TIME.

	$\frac{1}{4}$ Mile.	$\frac{1}{2}$ Mile.	$\frac{3}{4}$ Mile.	Mile.
First heat.....	:34	1:06	1:35	2:15 $\frac{1}{2}$
Second heat.....	:33 $\frac{1}{4}$	1:05 $\frac{1}{2}$	1:40	2:14 $\frac{1}{4}$
Third heat.....	:32 $\frac{1}{2}$	1:06	1:40 $\frac{1}{2}$	2:16 $\frac{1}{4}$
Fourth heat.....	:34	1:07	1:41 $\frac{1}{2}$	2:16 $\frac{1}{2}$

TUESDAY, SEPTEMBER 13.

2:08 Pace—Purse \$900—Divided \$450, \$225, \$135 and \$90.

Bub O'Reil, b. g., by	—Dick Me-				
Mahon, Lexington, Ky.....	1	1	2	2	4
Larry Ginter, b. s., by Madeyone—C. S.					
Lucas, Iowa City, Ia.....	4	2	1	3	2
Black Pet, blk. m., by Amsterdam—Bun-					
tin & Stevens, Lebanon, Ind.....	2	6	4	1	3
Ethel Mc, ch. m., by Jersey Wilkes—W.					
H. McCarthy, Terre Haute, Ind.....	6	3	3	4	1

TIME.

	$\frac{1}{4}$ Mile.	$\frac{1}{2}$ Mile.	$\frac{3}{4}$ Mile.	Mile.
First heat.....	:30 $\frac{1}{4}$	1:01 $\frac{1}{2}$	1:34	2:07 $\frac{1}{2}$
Second heat.....	:31	1:02	1:34 $\frac{1}{2}$	2:06 $\frac{1}{2}$
Third heat.....	:31 $\frac{1}{2}$	1:04 $\frac{1}{2}$	1:36	2:08 $\frac{1}{4}$
Fourth heat.....	:33	1:06	1:38 $\frac{1}{4}$	2:10
Fifth heat.....	:34	1:08	1:40	2:11

TUESDAY, SEPTEMBER 13.

2:20 Trot—Purse \$700—Divided \$350, \$175, \$105 and \$70.

Dorothea, br. m., by Great Heart—Charles Wilson, Peru					
Ind.	1	1	1	1	1
Ethel W, b. m., by Melvin Wilkes—G. W. Cherry, Prince-					
ton, Ind.....	7	2	2	2	2
Billy B, s. g., by Caneline Wilkes—Sinclair & Neal, Mont-					
pelier, Ind.....	2	3	3	3	3
Ozone, b. g., by Ozanna—W. O. Foote, Dallas, Tex.....	3	4	4	4	4

TIME.

	$\frac{1}{4}$ Mile.	$\frac{1}{2}$ Mile.	$\frac{3}{4}$ Mile.	Mile.
First heat.....	:31 $\frac{1}{2}$	1:05	1:39 $\frac{1}{4}$	2:15 $\frac{1}{2}$
Second heat.....	:32 $\frac{3}{4}$	1:05 $\frac{1}{2}$	1:39	2:13 $\frac{1}{4}$
Third heat.....	:32 $\frac{1}{4}$	1:05 $\frac{1}{2}$	1:39	2:14 $\frac{1}{4}$

WEDNESDAY, SEPTEMBER 14.

2:25 Pace—Purse \$500—Divided \$250, \$125, \$75 and \$50.

Arlington Boy, b. h., by Arlington—J. N. Thompson, Terre Haute, Ind.....	5	1	7	1	1
Argo Haile, b. g., by Dr. Haile—Charles Wilson, Peru, Ind.....	3	12	1	2	2
Arrow Wilkes, b. g., by Gambrel—J. P. Haymaker, Indianapolis, Ind.....	1	4	5	3	3
Ed Patch, b. s., by Dan Patch—Edgar Blessing, Pittsboro, Ind.....	4	3	2	4	4

TIME.

	$\frac{1}{4}$ Mile.	$\frac{1}{2}$ Mile.	$\frac{3}{4}$ Mile.	Mile.
First heat.....	:32 $\frac{1}{4}$	1:06	1:41	2:17 $\frac{1}{4}$
Second heat.....	:33	1:07	1:43	2:18
Third heat.....	:33	1:07	1:41	2:18
Fourth heat.....	:32	1:06	1:43	2:20
Fifth heat.....	:31 $\frac{1}{2}$	1:04 $\frac{1}{4}$	1:37 $\frac{1}{2}$	2:12 $\frac{1}{4}$

WEDNESDAY, SEPTEMBER 14.

2:12 Trot—Purse \$800—Divided \$400, \$200, \$120 and \$80.

Katharine A, by Wiggins — Douglas Thomas, Paris, Ky.....	2	2	1	1	1
Kirkwood Jr. br. s., by Silverthorn—Jas. McMordine, Leadville, Colo.....	1	2	2	3	3
Crescent, g. g., by Jim Wilson—W. A. Stout, Indianapolis, Ind.....	3	5	3	2	2
Old Fashion, b. m., by Gladax—Fleming & Son, Terre Haute, Ind.....	7	3	5	4	4

TIME.

	$\frac{1}{4}$ Mile.	$\frac{1}{2}$ Mile.	$\frac{3}{4}$ Mile.	Mile.
First heat.....	:32 $\frac{1}{4}$	1:08	1:41	2:14 $\frac{1}{2}$
Second heat.....	:31 $\frac{1}{2}$	1:05 $\frac{1}{4}$	1:38	2:12 $\frac{1}{2}$
Third heat.....	:33	1:07 $\frac{3}{4}$	1:41 $\frac{1}{2}$	2:15
Fourth heat.....	:32	1:04 $\frac{1}{2}$	1:38	2:11 $\frac{1}{4}$
Fifth heat.....	:31 $\frac{1}{4}$	1:05	1:29	2:12

WEDNESDAY, SEPTEMBER 14.

2:17 Pace—Purse \$700—Divided \$350, \$175, \$105 and \$70.

Lady May, b. m., by Commodore Kittson—John Hussey..	1	1	1
Ed Geers, b. g., by Nutwood Chieftain—T. W. Box, Bedford, Ind.....	2	2	2
Ed C, b. g., by Fairlawn Medium—W. O. Foote, Dallas, Texas	5	13	2
Delaware Boy, blk. s., by Huntsman—George Philips, Red Key, Ind.....	3	6	8

TIME.

	$\frac{1}{4}$ Mile.	$\frac{1}{2}$ Mile.	$\frac{3}{4}$ Mile.	Mile.
First heat.....	:33	1:06 $\frac{1}{2}$	1:39 $\frac{1}{4}$	2:12 $\frac{1}{4}$
Second heat.....	:32	1:05 $\frac{3}{4}$	1:38 $\frac{1}{2}$	2:12 $\frac{1}{4}$
Third heat.....	:33	1:06	1:39 $\frac{1}{2}$	2:13 $\frac{1}{4}$

To Beat 2:30 Pacing Record.

Yoma, b. m., by Gambrel—G. O. Anderson, Rushville, Ind..... 1

TIME.

	$\frac{1}{4}$ Mile.	$\frac{1}{2}$ Mile.	$\frac{3}{4}$ Mile.	Mile.
First heat.....	:33 $\frac{1}{4}$	1:08 $\frac{1}{2}$	1:43	2:17

THURSDAY, SEPTEMBER 15.

2:13 Pace—Purse \$800—Divided \$400, \$200, \$120 and \$80.

Lady Bellbrook, br. m., by Silent Brook—A. King, Kings Mills, Ohio	1	1	1
Online Jr, b. h., by Online—S. W. Lyon, Columbus, Ohio.	6	2	2
Elbrino, b. g., by Hambrino—T. H. Porter, St. Johns, Mich.	2	7	3
Czarina, ch. m., by Czar—W. H. Marvin, Lafayette, Ind.	10	3	8

TIME.

	$\frac{1}{4}$ Mile.	$\frac{1}{2}$ Mile.	$\frac{3}{4}$ Mile.	Mile.
First heat.....	:31	1:05	1:38 $\frac{1}{2}$	2:12 $\frac{1}{4}$
Second heat.....	:32	1:04 $\frac{3}{4}$	1:38	2:11 $\frac{1}{4}$
Third heat.....	:31 $\frac{1}{4}$	1:05	1:38	2:12

THURSDAY, SEPTEMBER 15.

2:24 Trot—Purse \$600—Divided \$300, \$150, \$90 and \$60.

Blix, b. m., by Chatsworth—John L. Grundy, Lebanon, Ky.	1	1	1
Scarlet Letter, b. m., by Tekmar—Ross & Dickerson, Indianapolis, Ind.	3	2	5
Donna H, s. m., by Reward—W. A. Stout, Indianapolis, Ind.	2	6	4
Fred C, br. g., by Hindoo King—Frank Colby, Sheridan, Ind.	5	7	2

TIME.

	$\frac{1}{4}$ Mile.	$\frac{1}{2}$ Mile.	$\frac{3}{4}$ Mile.	Mile.
First heat	:34	1:08 $\frac{1}{2}$	1:42	2:15
Second heat	:33 $\frac{3}{4}$	1:08 $\frac{1}{4}$	1:41	2:13 $\frac{1}{2}$
Third heat	:34	1:07 $\frac{1}{4}$	1:41 $\frac{1}{4}$	2:14 $\frac{3}{4}$

Free-for-All Trot—Purse \$1,000—Divided \$500, \$250, \$150 and \$100.

Harold H, b. g., by Roadmaster—John Moyse, Winnipeg, Manitoba	1	1	1
Edith W, b. m., by Ben Lomand Jr—White River Stock Farm, Muncie, Ind.	2	2	2
China Maid, b. m., by McKinney—R. A. Rouse, Danville, Ill.	3	3	3

TIME.

	$\frac{1}{4}$ Mile.	$\frac{1}{2}$ Mile.	$\frac{3}{4}$ Mile.	Mile.
First heat	:30 $\frac{1}{2}$	1:02 $\frac{3}{4}$	1:35	2:06 $\frac{3}{4}$
Second heat	:30 $\frac{1}{2}$	1:02 $\frac{1}{4}$	1:34	2:06
Third heat	:31 $\frac{3}{4}$	1:02 $\frac{5}{8}$	1:33 $\frac{1}{2}$	2:04 $\frac{1}{2}$

FRIDAY, SEPTEMBER 16.

2:15 Trot—Purse \$800—Divided \$400, \$200, \$120 and \$80.

Circus Girl, b. m., by Eagle Bird—H. A. Bell, Louisville, Ky.	1	1	3	3	4
Princess Derby, by .....—T. J. Wildey, Jackson, Mich.	5	3	1	1	3
Miss Leo Rex, b. m., by Geleo Rex—W. H. Marvin, Lafayette, Ind.	2	5	5	2	1
Gov. McCauley, b. g., by Gov. Strong—W. O. Foote, Dallas, Tex.	3	2	2	4	2

	TIME.			
	$\frac{1}{4}$ Mile.	$\frac{1}{2}$ Mile.	$\frac{3}{4}$ Mile.	Mile.
First heat.....	:33	1:06 $\frac{1}{4}$	1:41	2:15
Second heat.....	:33	1:06 $\frac{1}{2}$	1:40 $\frac{1}{2}$	2:14 $\frac{1}{4}$
Third heat.....	:33	1:05 $\frac{1}{2}$	1:39 $\frac{3}{4}$	2:13 $\frac{1}{4}$
Fourth heat.....	:32 $\frac{1}{2}$	1:05 $\frac{1}{4}$	1:40	2:15
Fifth heat.....	:34 $\frac{3}{4}$	1:09	1:43 $\frac{1}{4}$	2:17 $\frac{1}{2}$

2:21 Pace—Purse \$700—Divided \$350, \$175, \$105 and \$70.

Christina Simmons, blk. m., by Simmons—W. A. Snyder, Bowling Green, O.....	1	6	1	1
Rose M, by Agricola—J. H. Sullivan, Van Buren, Ind.....	4	1	4	4
Kruger, s. g., by Mercury—Wm. Gerst, Nashville, Tenn.....	2	5	2	2
Chester A, b. g., by Arrowood—G. O. Anderson.....	11	5	2	3

	TIME.			
	$\frac{1}{4}$ Mile.	$\frac{1}{2}$ Mile.	$\frac{3}{4}$ Mile.	Mile.
First heat.....	:34 $\frac{1}{4}$	1:05 $\frac{1}{2}$	1:39	2:11 $\frac{1}{2}$
Second heat.....	:33 $\frac{1}{2}$	1:06 $\frac{1}{4}$	1:41	2:14 $\frac{1}{4}$
Third heat.....	:32 $\frac{1}{4}$	1:06	1:40	2:13 $\frac{1}{4}$
Fourth heat.....	:33 $\frac{1}{4}$	1:07	1:41 $\frac{1}{4}$	2:14

FRIDAY, SEPTEMBER 16.

Free-for-All Trot—Purse \$1,000—Divided \$500, \$250, \$150 and \$100.

Hall Fry, b. g., by Woodspite—W. O. Foote, Dallas, Tex.....	2	2	2	1	1
Newton A, br. g., by Renown—Anderson Bros., Roachdale, Ind.....	1	1	5	4	3
Mable Onward, b. m., by Shadeland Onward—White River Stock Farm, Muncie, Ind.....	4	4	1	3	4
Palm Leaf, b. g., by Onwardo—W. H. McCarthy, Terre Haute, Ind.....	3	3	4	2	2

	TIME.			
	$\frac{1}{4}$ Mile.	$\frac{1}{2}$ Mile.	$\frac{3}{4}$ Mile.	Mile.
First heat.....	:32	1:04	1:39	2:12 $\frac{1}{4}$
Second heat.....	:31	1:03 $\frac{1}{2}$	1:37 $\frac{1}{2}$	2:10 $\frac{1}{2}$
Third heat.....	:32	1:05	1:38	2:11 $\frac{1}{4}$
Fourth heat.....	:31 $\frac{3}{4}$	1:04 $\frac{1}{2}$	1:38	2:10 $\frac{1}{2}$
Fifth heat.....	:32 $\frac{1}{4}$	1:05	1:37 $\frac{1}{4}$	2:11 $\frac{1}{4}$

Rex Americus Stake for Two-Year-Olds—Stake \$1,000.

Rex Orator, b. c., by Rex Americus—W. W. Evans, Lexington, Ky.....	5	5
Lady Americus, blk. f., by Rex Americus—S. R. Holt, Indianapolis, Ind.....	2	3
Bay Leaf, b. c., by Rex Americus—Dr. J. H. Matthews, Bremen, Ind.....	3	2
John Sweigert's Rex, b. c., by Rex Americus—John Sweigert, Muncie, Ind.....	4	4
Hazel H, gr. f., by Rex Americus—Thomas Hawkins, Shelbyville, Ind.....	1	1

TIME.

	$\frac{1}{4}$ Mile.	$\frac{1}{2}$ Mile.	$\frac{3}{4}$ Mile.	Mile.
First heat.....	:38 $\frac{3}{4}$	1:18 $\frac{1}{2}$	1:59	2:40
Second heat.....	:36	1:10 $\frac{1}{2}$	1:46 $\frac{1}{4}$	2:23 $\frac{3}{4}$

HORSES.

CLASS I—FRENCH DRAFT AND PERCHERON.

(M. A. McDonald, West Lebanon, Ind., Judge.)

Stallion 4 years old and over—

(1) J. Crouch & Son, Lafayette, Ind.....	\$ 25 00
(2) J. Crouch & Son, Lafayette, Ind.....	12 00
(3) J. Crouch & Son, Lafayette, Ind.....	8 00

Stallion 3 years old and under 4—

(1) J. Crouch & Son, Lafayette, Ind.....	15 00
(2) Frisinger & Co., Decatur, Ind.....	10 00
(3) J. Crouch & Son, Lafayette, Ind.....	6 00

Stallion 2 years old and under 3—

(1) J. Crouch & Son, Lafayette, Ind.....	12 00
(2) Frisinger & Co., Decatur, Ind.....	8 00
(3) No award.	

Stallion 1 year old and under 2—

(1) No award.
(2) No award.
(3) No award.

Stallion showing four best colts under 4 years old—

(1) No award.
(2) No award.
(3) No award.

Mare 4 years old and over—

- (1) C. D. McPherson, Fairfield, Ia..... 25 00
 (2) C. D. McPherson, Fairfield, Ia..... 12 00
 (3) No award.

Mare 3 years old and under 4—

- (1) C. D. McPherson, Fairfield, Ia..... 15 00
 (2) No award.
 (3) No award.

Mare 2 years old and under 3—

- (1) No award.
 (2) No award.
 (3) No award.

Mare 1 year old and under 2—

- (1) C. D. McPherson, Fairfield, Ia..... 10 00
 (2) C. D. McPherson, Fairfield, Ia..... 6 00
 (3) No award.

Mare and two of her progeny 3 years old or under—

- (1) C. D. McPherson, Fairfield, Ia..... 25 00
 (2) No award.
 (3) No award.

CLASS II—CLYDESDALE AND ENGLISH SIRES.

(M. A. McDonald, West Lebanon, Ind., Judge.)

Stallion 4 years old and over—

- (1) Dr. Geo. Sangster, Monticello, Ind.....\$ 25 00
 (2) W. H. Lagrange & Son, Franklin, Ind..... 12 00
 (3) No award.

Stallion 3 years old and under 4—

- (1) No award.
 (2) No award.
 (3) No award.

Stallion 2 years old and under 3—

- (1) No award.
 (2) No award.
 (3) No award.

Stallion 1 year old and under 2—

- (1) C. D. McPherson, Fairfield, Ind..... 10 00
 (2) No award.
 (3) No award.

Stallion showing four best colts under 4 years old—

- (1) No award.
 (2) No award.
 (3) No award.

Mare 4 years old and over—	
(1) W. H. Lagrange & Son, Franklin, Ind.	25 00
(2) W. H. Lagrange & Son, Franklin, Ind.	12 00
(3) No award.	
Mare 3 years old and under 4—	
(1) No award.	
(2) No award.	
(3) No award.	
Mare 2 years old and under 3—	
(1) W. H. Lagrange & Son, Franklin, Ind.	12 50
(2) No award.	
(3) No award.	
Mare 1 year old and under 2—	
(1) W. H. Lagrange & Son, Franklin, Ind.	10 00
(2) No award.	
(3) No award.	
Mare and two of her progeny 3 years old or under—	
(1) W. H. Lagrange & Son, Franklin, Ind.	25 00
(2) No award.	
(3) No award.	

CLASS III—BELGIANS.

(M. A. McDonald, West Lebanon, Ind., Judge.)

Stallion 4 years old and over—	
(1) J. Crouch & Son, Lafayette, Ind.	\$ 20 00
(2) J. Crouch & Son, Lafayette, Ind.	10 00
(3) J. Crouch & Son, Lafayette, Ind.	5 00
Stallion 3 years old and under 4—	
(1) J. Crouch & Son, Lafayette, Ind.	12 00
(2) Frisinger & Co., Decatur, Ind.	8 00
(3) Frisinger & Co., Decatur, Ind.	5 00
Stallion 2 years old and under 3—	
(1) J. Crouch & Son, Lafayette, Ind.	10 00
(2) J. Crouch & Son, Lafayette, Ind.	7 00
(3) No award.	
Stallion 1 year old and under 2—	
(1) Frisinger & Co., Decatur, Ind.	10 00
(2) No award.	
(3) No award.	
Stallion showing four best colts under 4 years old—	
(1) No award.	
(2) No award.	
(3) No award.	

Mare 4 years old and over—

- (1) No award.
- (2) No award.
- (3) No award.

Mare 3 years old and under 4—

- (1) No award.
- (2) No award.
- (3) No award.

Mare 2 years old and under 3—

- (1) No award.
- (2) No award.
- (3) No award.

Mare 1 year old and under 2—

- (1) No award.
- (2) No award.
- (3) No award.

Mare and two of her progeny 3 years old or under—

- (1) No award.
- (2) No award.
- (3) No award.

CLASS IV—CLEVELAND BAY, HACKNEY AND AMERICAN COACH.

(M. A. McDonald, West Lebanon, Ind., Judge.)

Stallion 4 years old and over—

- (1) J. Crouch & Son, Lafayette, Ind. \$ 25 00
- (2) M. A. McDonald, West Lebanon, Ind. 12 00
- (3) No award.

Stallion 3 years old and under 4—

- (1) S. J. Peabody, Columbia City, Ind. 15 00
- (2) Dr. Geo. Sangster, Monticello, Ind. 10 00
- (3) C. D. McPherson, Fairfield, Ia. 6 00

Stallion 2 years old and under 3—

- (1) No award.
- (2) No award.
- (3) No award.

Stallion 1 year old and under 2—

- (1) J. Crouch & Son, Lafayette, Ind. 10 00
- (2) C. D. McPherson, Fairfield, Ia. 6 00
- (3) C. D. McPherson, Fairfield, Ia. 4 00

Stallion showing four best colts under 4 years old—

- (1) C. D. McPherson, Fairfield, Ia. 25 00
- (2) No award.
- (3) No award.

Mare 4 years old and over—

(1) M. A. McDonald, West Lebanon, Ind.....	25 00
(2) C. D. McPherson, Fairfield, Ia.....	12 00
(3) C. D. McPherson, Fairfield, Ia.....	8 00

Mare 3 years old and under 4—

(1) Dr. Geo. Sangster, Monticello, Ind.....	15 00
(2) No award.	
(3) No award.	

Mare 2 years old and under 3—

(1) C. D. McPherson, Fairfield, Ia.....	12 00
(2) No award.	
(3) No award.	

Mare 1 year old and under 2—

(1) Dr. Geo. Sangster, Monticello, Ind.....	10 00
(2) C. D. McPherson, Fairfield, Ia.....	6 00
(3) No award.	

CLASS V—FRENCH AND GERMAN COACH.

(M. A. McDonald, West Lebanon, Ind., Judge.)

Stallion 4 years old and over—

(1) J. Crouch & Son, Lafayette, Ind.....	\$ 25 00
(2) J. Crouch & Son, Lafayette, Ind.....	12 00
(3) J. E. Isenhour, New Augusta, Ind.....	8 00

Stallion 3 years old and under 4—

(1) J. Crouch & Son, Lafayette, Ind.....	15 00
(2) J. Crouch & Son, Lafayette, Ind.....	10 00
(3) J. Crouch & Son, Lafayette, Ind.....	6 00

Stallion 2 years old and under 3—

(1) J. Crouch & Son, Lafayette, Ind.....	12 00
(2) J. Crouch & Son, Lafayette, Ind.....	8 00
(3) No award.	

Stallion 1 year old and under 2—

(1) J. Crouch & Son, Lafayette, Ind.....	10 00
(2) No award.	
(3) No award.	

Mare 4 years old and over—

(1) J. Crouch & Son, Lafayette, Ind.....	25 00
(2) J. Crouch & Son, Lafayette, Ind.....	12 00
(3) No award.	

Mare 3 years old and under 4—

(1) J. Crouch & Son, Lafayette, Ind.....	15 00
(2) No award.	
(3) No award.	

Mare 1 year old and under 2—

- (1) J. Crouch & Son, Lafayette, Ind. 10 00
 (2) No award.
 (3) No award.

Mare and two of her progeny 3 years old or under—

- (1) No award.
 (2) No award.
 (3) No award.

CLASS VI—GRADE DRAFT.

(M. A. McDonald, West Lebanon, Ind., Judge.)

Gelding or mare 4 years old or over—

- (1) C. D. McPherson, Fairfield, Ia. 10 00
 (2) No award.
 (3) No award.

Gelding or mare 3 years old and under 4—

- (1) No award.
 (2) No award.
 (3) No award.

Gelding or mare 2 years old and under 3—

- (1) Dr. George Sangster, Monticello, Ind. 10 00
 (2) No award.
 (3) No award.

Best span of heavy draft horses, mares or geldings, any breed, in harness—

- (1) C. D. McPherson, Fairfield, Ia. 20 00
 (2) W. H. Lagrange & Son, Franklin, Ind. 8 00
 (3) No award.

CLASS VII—STANDARD BRED HORSES.

(T. W. Bell, Union Stock Yards, Chicago, Ill., Judge.)

Stallion 4 years old and over—

- (1) S. J. Fleming & Son, Terre Haute, Ind. \$ 25 00
 (2) S. R. Holt, Indianapolis, Ind. 15 00
 (3) M. A. McDonald, West Lebanon, Ind. 10 00

Stallion 3 years old and under 4—

- (1) S. R. Holt, Indianapolis, Ind. 15 00
 (2) No award.
 (3) No award.

Stallion 2 years old and under 3—

- (1) S. J. Fleming & Son, Terre Haute, Ind. 12 00
 (2) No award.
 (3) No award.

Stallion 1 year old and under 2—

- (1) S. R. Holt, Indianapolis, Ind. 10 00
 (2) C. D. McPherson, Fairfield, Ia. 6 00
 (3) No award.

Stallion showing four best colts under 4 years old—

- (1) S. R. Holt, Indianapolis, Ind. 25 00
 (2) S. J. Fleming & Son, Terre Haute, Ind. 15 00
 (3) No award.

Mare 4 years old and over—

- (1) S. R. Holt, Indianapolis, Ind. 25 00
 (2) Charles A. White, Danville, Ind. 15 00
 (3) M. A. McDonald, West Lebanon, Ind. 10 00

Mare 3 years old and under 4—

- (1) S. R. Holt, Indianapolis, Ind. 15 00
 (2) S. J. Fleming & Son, Terre Haute, Ind. 10 00
 (3) C. D. McPherson, Fairfield, Ia. 6 00

Mare 2 years old and under 3—

- (1) S. J. Fleming & Son, Terre Haute, Ind. 12 00
 (2) S. R. Holt, Indianapolis, Ind. 8 00
 (3) C. D. McPherson, Fairfield, Ia. 5 00

Mare 1 year old and under 2—

- (1) S. R. Holt, Indianapolis, Ind. 10 00
 (2) C. D. McPherson, Fairfield, Ia. 6 00
 (3) No award.

Mare and two of her progeny 3 years old or under—

- (1) No award.
 (2) No award.
 (3) No award.

CLASS VIII—NON-STANDARD HORSES CAN COMPETE.

(T. W. Bell, Union Stock Yards, Chicago, Ill., Judge.)

Gelding 4 years old and over—

- (1) Mrs. Desdemona Redick, Indianapolis, Ind. \$ 20 00
 (2) J. S. Mann, Indianapolis, Ind. 10 00
 (3) Dr. George Sangster, Monticello, Ind. 5 00

Gelding 3 years old and under 4—

- (1) No award.
 (2) No award.
 (3) No award.

Gelding 2 years old and under 3—

- (1) R. A. Rouse, Danville, Ill. 10 00
 (2) No award.
 (3) No award.

Mare 4 years old and over—

(1) S. R. Holt, Indianapolis, Ind.	20 05
(2) M. A. McDonald, West Lebanon, Ind.	10 00
(3) W. L. Harris, Crawfordsville, Ind.	5 00

Mare 3 years old and under 4—

(1) R. A. Rouse, Danville, Ill.	12 00
(2) R. A. Rouse, Danville, Ill.	8 00
(3) No award.	

Mare 2 years old and under 3—

(1) S. J. Fleming & Son, Terre Haute, Ind.	10 00
(2) R. A. Rouse, Danville, Ill.	7 00
(3) R. A. Rouse, Danville, Ill.	5 00

CLASS IX—BEST AND BEST APPOINTED GENTLEMEN'S PAIR
TURNOUT. (DEALERS EXCLUDED.)

(T. W. Bell, Union Stock Yards, Chicago, Ill., Judge.)

Pair of mares or geldings, not under 15 hands—

(1) William R. Brown, Indianapolis, Ind.	\$ 25 00
(2) J. S. Mann, Indianapolis, Ind.	15 05
(3) C. D. McPherson, Fairfield, Ia.	10 00

CLASS X—BEST AND BEST APPOINTED GENTLEMEN'S PAIR
TURNOUT. (FOR DEALERS ONLY.)

(T. W. Bell, Union Stock Yards, Chicago, Ill., Judge.)

Pair of mares or geldings, not under 15 hands—

- (1) No award.
- (2) No award.
- (3) No award.

CLASS XI—FOR FOUR-IN-HAND.

(T. W. Bell, Union Stock Yards, Chicago, Ill., Judge.)

For best four-in-hand team (mares or geldings)—

- (1) No award.
- (2) No award.
- (3) No award.

CLASS XII—FOR TANDEM.

(T. W. Bell, Union Stock Yards, Chicago, Ill., Judge.)

For best tandem of horses (mares or geldings)—

(1) William R. Brown, Indianapolis, Ind.	\$ 20 00
(2) No award.	
(3) No award.	

CLASS XIII—FOR HIGH STEPPERS.

(T. W. Bell, Union Stock Yards, Chicago, Ill., Judge.)

Pair of matched horses, high steppers (mares or geldings), not more than 15 $\frac{1}{4}$ hands—

(1) William R. Brown, Indianapolis, Ind.	\$ 35 00
(2) J. S. Mann, Indianapolis, Ind.	25 00
(3) C. D. McPherson, Fairfield, Ia.	15 00

Single horse, high stepper (mare or gelding), not more than 15 $\frac{1}{4}$ hands—

(1) William R. Brown, Indianapolis, Ind.	20 00
(2) Dr. George Sangster, Monticello, Ind.	15 00
(3) W. L. Harris, Crawfordsville, Ind.	10 00

CLASS XIV—EQUIPAGES.

(T. W. Bell, Union Stock Yards, Chicago, Ill., Judge.)

One-horse, one-seated equipage for lady—

(1) Mrs. Desdemona Redick, Indianapolis, Ind.	\$ 20 00
(2) C. D. McPherson, Fairfield, Ia.	15 00
(3) No award.	

Vehicle for children—

(1) C. L. Hare, Indianapolis, Ind.	20 00
(2) William R. Brown, Indianapolis, Ind.	15 00
(3) C. D. McPherson, Fairfield, Ia.	10 00

CLASS XV—COACH AND CARRIAGE PAIR AND ROADSTERS.

(T. W. Bell, Union Stock Yards, Chicago, Ill., Judge.)

Coach or carriage pair—

(1) William R. Brown, Indianapolis, Ind.	\$ 20 00
(2) No award.	
(3) No award.	

Single roadster (mare)—

(1) W. L. Harris, Crawfordsville, Ind.	30 00
(2) S. R. Holt, Indianapolis, Ind.	20 00
(3) Dr. John E. Hoover, Indianapolis, Ind.	10 00

Single roadster (gelding)—

(1) Mrs. Desdemona Redick.	30 00
(2) Dr. George Sangster, Monticello, Ind.	20 00
(3) Jeff Williams, Brazil, Ind.	10 00

Double roadster—

(1) No award.	
(2) No award.	
(3) No award.	

CLASS XVI—SADDLE HORSES.

(T. W. Bell, Union Stock Yards, Chicago, Ill., Judge.)

Best saddle stallion—

- (1) George E. Connolly, Madison, Ind. \$ 40 00
 (2) No award.
 (3) No award.

Best saddle mare—

- (1) J. W. Denton, Bloomington, Ind. 40 00
 (2) J. W. Denton, Bloomington, Ind. 20 00
 (3) E. L. McCollem, Columbus, Ohio. 15 00

Best saddle gelding—

- (1) J. W. Denton, Bloomington, Ind. 40 00
 (2) G. M. Brady, Cincinnati, Ohio. 20 00
 (3) F. J. Brockschlager, Vevay, Ind. 15 00

Best ladies' saddle mare or gelding, to be shown by lady—

- (1) Miss Cornelia A. Allen, Irvington, Ind. 40 00
 (2) J. W. Denton, Bloomington, Ind. 20 00
 (3) George E. Connolly, Madison, Ind. 15 00

Best combined harness and saddle mare or gelding—

- (1) J. W. Denton, Bloomington, Ind. 40 00
 (2) G. M. Brady, Cincinnati, Ohio. 20 00
 (3) J. W. Denton, Bloomington, Ind. 15 00

Champion, best saddle stallion, mare or gelding—

- (1) George E. Connolly, Madison, Ind. 50 00

CLASS XVII—PONIES (ALL BREEDS).

(T. W. Bell, Union Stock Yards, Chicago, Ill., Judge.)

Pony, 13 hands or under, in single harness—

- (1) Helen A. Donson, Indianapolis, Ind. \$ 15 00
 (2) C. L. Hare, Indianapolis, Ind. 10 00

Pony, 13 to 14½ hands, in single harness—

- (1) David C. Miller, Roachdale, Ind. 15 00
 (2) C. D. McPherson, Fairfield, Ia. 10 00

Mare and colt—

- (1) C. L. Hare, Indianapolis, Ind. 15 00
 (2) C. D. McPherson, Fairfield, Ia. 10 00

Pair of ponies, under 14½ hands, in harness—

- (1) C. L. Hare, Indianapolis, Ind. 15 00
 (2) J. B. Hasselman, Indianapolis, Ind. 10 00

Ponies, tandems—

(1) C. L. Hare, Indianapolis, Ind.....	15 00
(2) C. D. McPherson, Fairfield, Ia.....	10 00

Ponies, four-in-hand—

(1) C. L. Hare, Indianapolis, Ind.....	15 00
(2) C. D. McPherson, Fairfield, Ia.....	10 00

CATTLE. (BEEF BREEDS.)

CLASS XVIII—SHORTHORNS.

(John C. Baker, Manhattan, Ill., Judge.)

Bull 3 years old and over—

(1) E. E. Souers, Warren, Ind.....	\$ 25 00
(2) W. F. Christian & Son, Indianapolis, Ind.....	15 00
(3) J. G. Robbins & Sons, Horace, Ind.....	5 00

Bull 2 years old and under 3—

(1) Frank G. Hogan, Louisville, Ky.....	20 00
(2) George S. Ringer, Rockfield, Ind.....	10 00
(3) C. L. Gerlaugh, Osborn, Ohio.....	4 00

Bull 1 year old and under 2—

(1) S. R. Quick & Sons, Indianapolis, Ind.....	15 00
(2) J. G. Robbins & Sons, Horace, Ind.....	6 00
(3) Frank G. Hogan, Louisville, Ky.....	3 00

Bull calf under 1 year—

(1) J. G. Robbins & Sons, Horace, Ind.....	8 00
(2) E. W. Cockrell, Horace, Ind.....	3 00
(3) Frank W. Cotton, Manilla, Ind.....	2 00

Cow 3 years old and over—

(1) E. E. Souers, Warren, Ind.....	25 00
(2) Frank W. Cotton, Manilla, Ind.....	15 00
(3) W. F. Christian & Son, Indianapolis, Ind.....	5 00

Cow 2 years old and under 3—

(1) E. E. Souers, Warren, Ind.....	20 00
(2) E. E. Souers, Warren, Ind.....	10 00
(3) Hill & Anderson, Carthage, Ind.....	4 00

Heifer 1 year old and under 2—

(1) W. F. Christian & Son, Indianapolis, Ind.....	15 00
(2) J. W. Williams & Sons, Briant, Ind.....	6 00
(3) J. W. Williams & Son, Briant, Ind.....	3 00

Heifer calf under 1 year—

(1) E. E. Souers, Warren, Ind.....	8 00
(2) F. A. Carter, Indianola, Ill.....	3 00
(3) C. L. Gerlaugh, Osborn, Ohio.....	2 00

Four animals, either sex, the get of one sire—	
(1) J. G. Robbins & Sons, Horace, Ind.....	20 00
(2) W. F. Christian & Son, Indianapolis, Ind.....	10 00
(3) J. D. Douglass & Sons, Hope, Ind.....	4 00
Two animals, either sex, produce of one cow—	
(1) W. F. Christian & Son, Indianapolis, Ind.....	20 00
(2) J. W. Williams & Sons, Briant, Ind.....	10 00
(3) J. W. Williams & Sons, Briant, Ind.....	4 00
Exhibitor's herd—	
(1) E. E. Souers, Warren, Ind.....	50 00
(2) W. F. Christian & Son, Indianapolis, Ind.....	25 00
Breeder's herd—	
(1) W. F. Christian & Son, Indianapolis, Ind.....	50 00
(2) J. G. Robbins & Sons, Horace, Ind.....	25 00
Best fat steer 2 years old and under 3—	
(1) W. F. Christian & Son, Indianapolis, Ind.....	25 00
(2) Frank W. Cotton, Manilla, Ind.....	20 00
(3) No award.	
(4) No award.	
Best fat steer 1 year old and under 2—	
(1) J. G. Robbins & Sons, Horace, Ind.....	20 00
(2) W. F. Christian & Son, Indianapolis, Ind.....	15 00
(3) Hill & Anderson, Carthage, Ind.....	10 00
(4) Frank W. Cotton, Manilla, Ind.....	5 00
Best fat steer calf under 1 year—	
(1) J. W. Williams & Sons, Briant, Ind.....	15 00
(2) J. W. Williams & Sons, Briant, Ind.....	10 00
(3) No award.	
Champion, best bull, any age—	
(1) E. E. Souers, Warren, Ind.....	25 00
Champion, best cow or heifer, any age—	
(1) E. E. Souers, Warren, Ind.....	25 00

CLASS XIX—SPECIALS BY AMERICAN SHORTHORN BREEDERS' ASSOCIATION.

(John C. Baker, Manhattan, Ill., Judge.)

Bull over 3 years—	
(1) E. E. Souers, Warren, Ind.....	\$ 15 00
(2) W. F. Christian & Son, Indianapolis, Ind.....	10 00
(3) J. G. Robbins & Sons, Horace, Ind.....	6 00
(4) Adkins & Stevenson, Bement, Ill.....	4 00
(5) Hill & Anderson, Carthage, Ind.....	3 00

Bull 2 years old and under 3—

(1) Frank G. Hogan, Louisville, Ky.....	15 00
(2) George S. Ringer, Rockfield, Ind.....	10 00
(3) C. L. Gerlaugh, Osborn, Ohio.....	6 00
(4) S. R. Quick & Sons, Indianapolis, Ind.....	4 00
(5) E. W. Bowen, Delhi, Ind.....	3 00

Bull 1 year old and under 2—

(1) S. R. Quick & Sons, Indianapolis, Ind.....	15 00
(2) J. G. Robbins & Sons, Horace, Ind.....	10 00
(3) Frank G. Hogan, Louisville, Ky.....	5 00
(4) C. L. Gerlaugh, Osborn, Ohio.....	4 00
(5) J. D. Douglass & Sons, Hope, Ind.....	3 00

Bull under 1 year—

(1) J. G. Robbins & Sons, Horace, Ind.....	15 00
(2) E. W. Cockrell, Horace, Ind.....	10 00
(3) Frank W. Cotton, Manilla, Ind.....	5 00
(4) Hill & Anderson, Carthage, Ind.....	4 00
(5) John G. Gartin & Sons, Burney, Ind.....	3 00

Cow 3 years old—

(1) E. E. Souers, Warren, Ind.....	15 00
(2) Frank W. Cotton, Manilla, Ind.....	10 00
(3) W. F. Christian & Son, Indianapolis, Ind.....	6 00
(4) F. A. Carter, Indianola, Ill.....	4 00
(5) Jonas Dinger, Greenville, Ohio.....	3 00

Heifer 2 years old and under 3—

(1) E. E. Souers, Warren, Ind.....	15 00
(2) E. E. Souers, Warren, Ind.....	10 00
(3) Hill & Anderson, Carthage, Ind.....	6 00
(4) W. F. Christian & Son, Indianapolis, Ind.....	4 00
(5) Frank G. Hogan, Louisville, Ky.....	3 00

Heifer 1 year old and under 2—

(1) W. F. Christian & Son, Indianapolis, Ind.....	15 00
(2) J. W. Williams & Sons, Briant, Ind.....	10 00
(3) J. W. Williams & Sons, Briant, Ind.....	5 00
(4) Frank W. Cotton, Manilla, Ind.....	4 00
(5) C. L. Gerlaugh, Osborn, Ohio.....	3 00

Heifer under 1 year—

(1) E. E. Souers, Warren, Ind.....	15 00
(2) F. A. Carter, Indianola, Ill.....	10 00
(3) C. L. Gerlaugh, Osborn, Ohio.....	5 00
(4) W. F. Christian & Son, Indianapolis, Ind.....	4 00
(5) J. G. Robbins & Sons, Horace, Ind.....	3 00

CLASS XX—SPECIALS BY INDIANA SHORTHORN BREEDERS' ASSOCIATION.

(John C. Baker, Manhattan, Ill., Judge.)

Bull dropped between September 1, 1902, and January 1, 1903—	
(1) W. F. Christian & Son, Indianapolis, Ind.....	\$ 40 00
(2) J. D. Douglass & Sons, Hope, Ind.....	30 00
(3) S. R. Quick & Sons, Indianapolis, Ind.....	20 00
(4) W. F. Christian & Son, Indianapolis, Ind.....	10 00
Bull dropped between January 1, 1903, and September 1, 1903—	
(1) J. G. Robbins & Sons, Horace, Ind.....	40 00
(2) E. E. Souers, Warren, Ind.....	30 00
(3) Frank W. Cotton, Manilla, Ind.....	20 00
(4) S. R. Quick & Sons, Indianapolis, Ind.....	10 00
Bull dropped between September 1, 1903, and January 1, 1904—	
(1) J. G. Robbins & Sons, Horace, Ind.....	40 00
(2) E. W. Cockrell, Horace, Ind.....	30 00
(3) S. R. Quick & Sons, Indianapolis, Ind.....	20 00
(4) J. W. Williams & Sons, Briant, Ind.....	10 00
Bull dropped between January 1, 1904, and September 1, 1904—	
(1) Frank W. Cotton, Manilla, Ind.....	40 00
(2) J. D. Douglass & Sons, Hope, Ind.....	30 00
(3) J. W. Williams & Sons, Briant, Ind.....	20 00
(4) Hill & Anderson, Carthage, Ind.....	10 00
Heifer dropped between September 1, 1902, and January 1, 1903—	
(1) E. E. Souers, Warren, Ind.....	40 00
(2) W. F. Christian & Son, Indianapolis, Ind.....	30 00
(3) W. F. Christian & Son, Indianapolis, Ind.....	20 00
(4) J. G. Robbins & Son, Horace, Ind.....	10 00
Heifer dropped between January 1, 1903, and September 1, 1903—	
(1) W. F. Christian & Son, Indianapolis, Ind.....	40 00
(2) J. W. Williams & Sons, Briant, Ind.....	30 00
(3) J. D. Douglass & Sons, Hope, Ind.....	20 00
(4) Hill & Anderson, Carthage, Ind.....	10 00
Heifer dropped between September 1, 1903, and January 1, 1904—	
(1) J. G. Robbins & Sons, Horace, Ind.....	40 00
(2) J. D. Douglass & Sons, Hope, Ind.....	30 00
(3) John G. Gartin & Sons, Burney, Ind.....	20 00
(4) E. E. Souers, Warren, Ind.....	10 00
Heifer dropped between January 1, 1904, and September 1, 1904—	
(1) E. E. Souers, Warren, Ind.....	40 00
(2) W. F. Christian & Son, Indianapolis, Ind.....	30 00
(3) J. G. Robbins & Sons, Horace, Ind.....	20 00
(4) Hill & Anderson, Carthage, Ind.....	10 00

Steer dropped between September 1, 1902, and September 1, 1903—

(1) J. G. Robbins & Sons, Horace, Ind.....	50 00
(2) W. F. Christian & Son, Indianapolis, Ind.....	30 00
(3) Hill & Anderson, Carthage, Ind.....	20 00

Steer dropped since September 1, 1903—

(1) J. W. Williams & Sons, Briant, Ind.....	50 00
(2) J. W. Williams & Sons, Briant, Ind.....	30 00
(3) No award.	

CLASS XXI—HEREFORDS.

(John Hooker, New London, Ohio, Judge.)

Bull 3 years old and over—

(1) S. J. Peabody, Columbia City, Ind.....	\$ 25 00
(2) Walter G. Hadley, Danville, Ind.....	15 00
(3) Clem Graves, Bunker Hill, Ind.....	5 00

Bull 2 years old and under 3—

(1) David E. Studabaker, Bluffton, Ind.....	20 00
(2) No award.	
(3) No award.	

Bull 1 year old and under 2—

(1) S. J. Peabody, Columbia City, Ind.....	15 00
(2) Brown & Fletcher, Cloverdale, Ind.....	6 00
(3) Clem Graves, Bunker Hill, Ind.....	3 00

Bull calf under 1 year—

(1) S. J. Peabody, Columbia City, Ind.....	8 00
(2) Clem Graves, Bunker Hill, Ind.....	3 00
(3) David E. Studabaker, Bluffton, Ind.....	2 00

Cow 3 years old and over—

(1) Clem Graves, Bunker Hill, Ind.....	25 00
(2) William Kerby, Kokomo, Ind.....	15 00
(3) Walter G. Hadley, Danville, Ind.....	5 00

Cow 2 years old and under 3—

(1) Brown & Fletcher, Cloverdale, Ind.....	20 00
(2) William Kerby, Kokomo, Ind.....	10 00
(3) David E. Studabaker, Bluffton, Ind.....	4 00

Heifer 1 year old and under 2—

(1) Clem Graves, Bunker Hill, Ind.....	15 00
(2) David E. Studabaker, Bluffton, Ind.....	6 00
(3) Brown & Fletcher, Cloverdale, Ind.....	3 00

Heifer calf under 1 year—

(1) David E. Studabaker, Bluffton, Ind.....	8 00
(2) Clem Graves, Bunker Hill, Ind.....	3 00
(3) William Kerby, Kokomo, Ind.....	2 00

Four animals, either sex, the get of one sire—	
(1) Clem Graves, Bunker Hill, Ind.....	20 00
(2) Brown & Fletcher, Cloverdale, Ind.....	10 00
(3) William Kerby, Kokomo, Ind.....	4 00
Two animals, either sex, the produce of one cow—	
(1) Clem Graves, Bunker Hill, Ind.....	20 00
(2) David E. Studabaker, Bluffton, Ind.....	10 00
(3) William Kerby, Kokomo, Ind.....	4 00
Exhibitor's herd—	
(1) Clem Graves, Bunker Hill, Ind.....	50 00
(2) William Kerby, Kokomo, Ind.....	25 00
Breeders' herd—	
(1) Clem Graves, Bunker Hill, Ind.....	50 00
(2) David E. Studabaker, Bluffton, Ind.....	20 00
Best fat steer 2 years old and under 3—	
(1) Clem Graves, Bunker Hill, Ind.....	20 00
(2) S. J. Peabody, Columbia City, Ind.....	15 00
Best fat steer 1 year old and under 2—	
(1) Clem Graves, Bunker Hill, Ind.....	20 00
(2) C. E. Amsden & Sons, Waldron, Ind.....	15 00
(3) No award.	
(4) No award.	
Best fat steer calf under 1 year—	
(1) Brown & Fletcher, Cloverdale, Ind.....	15 00
(2) Clem Graves, Bunker Hill, Ind.....	10 00
(3) Brown & Fletcher, Cloverdale, Ind.....	5 00
Champion, best bull, any age—	
(1) S. J. Peabody, Columbia City, Ind.....	25 00
Champion, best cow or heifer, any age—	
(1) Brown & Fletcher, Cloverdale, Ind.....	25 00

CLASS XXII—SPECIALS BY INDIANA STATE HEREFORD BREEDERS' ASSOCIATION.

Best senior yearling bull—	
(1) Clem Graves, Bunker Hill, Ind.....	12 00
(2) William Kerby, Kokomo, Ind.....	10 00
(3) No award.	
(4) No award.	
(5) No award.	
Best junior yearling bull—	
(1) S. J. Peabody, Columbia City, Ind.....	12 00
(2) Brown & Fletcher, Cloverdale, Ind.....	10 00
(3) S. J. Peabody, Columbia City, Ind.....	8 00
(4) Brown & Fletcher, Cloverdale, Ind.....	6 00
(5) Clem Graves, Bunker Hill, Ind.....	5 00

Best senior bull calf—

- | | |
|--|-------|
| (1) Clem Graves, Bunker Hill, Ind..... | 12 00 |
| (2) C. E. Amsden & Sons, Waldron, Ind..... | 10 00 |
| (3) No award. | |
| (4) No award. | |
| (5) No award. | |

Best junior bull calf—

- | | |
|--|-------|
| (1) S. J. Peabody, Columbia City, Ind..... | 12 00 |
| (2) Brown & Fletcher, Cloverdale, Ind..... | 10 00 |
| (3) C. E. Amsden, Waldron, Ind..... | 8 00 |
| (4) C. E. Amsden, Waldron, Ind..... | 6 00 |
| (5) No award. | |

Best senior yearling heifer—

- | | |
|--|-------|
| (1) Clem Graves, Bunker Hill, Ind..... | 12 00 |
| (2) Brown & Fletcher, Cloverdale, Ind..... | 10 00 |
| (3) No award. | |
| (4) No award. | |
| (5) No award. | |

Best junior yearling heifer—

- | | |
|--|-------|
| (1) Clem Graves, Bunker Hill, Ind..... | 12 00 |
| (2) William Kerby, Kokomo, Ind..... | 10 00 |
| (3) Walter G. Hadley, Danville, Ind..... | 8 00 |
| (4) C. E. Amsden & Sons, Waldron, Ind..... | 6 00 |
| (5) No award. | |

Best senior heifer calf—

- | | |
|--|-------|
| (1) Clem Graves, Bunker Hill, Ind..... | 12 00 |
| (2) Walter G. Hadley, Danville, Ind..... | 10 00 |
| (3) C. E. Amsden & Sons, Waldron, Ind..... | 8 00 |
| (4) No award. | |
| (5) No award. | |

Best junior heifer calf—

- | | |
|--|-------|
| (1) Clem Graves, Bunker Hill, Ind..... | 12 00 |
| (2) William Kerby, Kokomo, Ind..... | 10 00 |
| (3) Walter G. Hadley, Danville, Ind..... | 8 00 |
| (4) No award. | |
| (5) No award. | |

Best herd—

- | | |
|--|-------|
| (1) Clem Graves, Bunker Hill, Ind..... | 15 00 |
| (2) C. E. Amsden & Sons, Waldron, Ind..... | 10 00 |

Best steer 2 years old and under 3—

- | | |
|--|-------|
| (1) Clem Graves, Bunker Hill, Ind..... | 12 00 |
| (2) S. J. Peabody, Columbia City, Ind..... | 10 00 |
| (3) No award. | |
| (4) No award. | |
| (5) No award. | |

Best steer 1 year old and under 2—

- | | |
|--|-------|
| (1) Clem Graves, Bunker Hill, Ind..... | 12 00 |
| (2) C. E. Amsden & Sons, Waldron, Ind..... | 10 00 |
| (3) No award. | |
| (4) No award. | |
| (5) No award. | |

Best steer calf—

- | | |
|--|-------|
| (1) Brown & Fletcher, Cloverdale, Ind..... | 12 00 |
| (2) Clem Graves, Bunker Hill, Ind..... | 10 00 |
| (3) Brown & Fletcher, Cloverdale, Ind..... | 8 00 |
| (4) C. E. Amsden & Sons, Waldron, Ind..... | 6 00 |
| (5) No award. | |

Champion steer—

- | | |
|--|-------|
| (1) Clem Graves, Bunker Hill, Ind..... | 15 00 |
| (2) No award. | |

CLASS XXIII—POLLED DURHAMS.

(C. E. McLane, Danville, Ind., Judge.)

Bull 3 years old and over—

- | | |
|---|----------|
| (1) William Tossey & Son, Marysville, Ohio..... | \$ 15 00 |
| (2) No award. | |
| (3) No award. | |

Bull 2 years old and under 3—

- | | |
|---|-------|
| (1) J. H. Martz, Greenville, Ohio..... | 10 00 |
| (2) William Tossey & Son, Marysville, Ohio..... | 7 00 |
| (3) No award. | |

Bull 1 year old and under 2—

- | | |
|---|------|
| (1) William Tossey & Son, Marysville, Ohio..... | 8 00 |
| (2) No award. | |
| (3) No award. | |

Bull calf under 1 year—

- | | |
|---|------|
| (1) J. H. Martz, Greenville, Ohio..... | 5 00 |
| (2) J. H. Martz, Greenville, Ohio..... | 3 00 |
| (3) William Tossey & Son, Marysville, Ohio..... | 2 00 |

Cow 3 years old and over—

- | | |
|---|-------|
| (1) J. H. Martz, Greenville, Ohio..... | 15 00 |
| (2) William Tossey & Son, Marysville, Ohio..... | 10 00 |
| (3) William Tossey & Son, Marysville, Ohio..... | 5 00 |

Cow 2 years old and under 3—

- | | |
|---|-------|
| (1) J. H. Martz, Greenville, Ohio..... | 10 00 |
| (2) William Tossey & Son, Marysville, Ohio..... | 7 00 |
| (3) William Tossey & Son, Marysville, Ohio..... | 4 00 |

Heifer 1 year old and under 2—

(1) J. H. Martz, Greenville, Ohio.....	8 00
(2) William Tossey & Son, Marysville, Ohio.....	6 00
(3) S. R. Quick & Sons, Indianapolis, Ind.....	3 00

Heifer calf under 1 year—

(1) J. H. Martz, Greenville, Ohio.....	5 00
(2) J. H. Martz, Greenville, Ohio.....	3 00
(3) William Tossey & Son, Marysville, Ohio.....	2 00

Four animals, either sex, the get of one sire—

(1) J. H. Martz, Greenville, Ohio.....	10 00
(2) William Tossey & Son, Marysville, Ohio.....	7 00
(3) William Tossey & Son, Marysville, Ohio.....	5 00

Two animals, either sex, the produce of one cow—

(1) William Tossey & Son, Marysville, Ohio.....	10 00
(2) William Tossey & Son, Marysville, Ohio.....	7 00
(3) William Tossey & Son, Marysville, Ohio.....	5 00

Exhibitor's herd—

(1) J. H. Martz, Greenville, Ohio.....	20 00
(2) William Tossey & Son, Marysville, Ohio.....	10 00

Breeder's herd—

(1) J. H. Martz, Greenville, Ohio.....	20 00
(2) William Tossey & Son, Marysville, Ohio.....	10 00

Best fat steer 2 years old and under 3—

(1) William Tossey & Son, Marysville, Ohio.....	20 00
(2) No award.	
(3) No award.	
(4) No award.	

Best fat steer 1 year old and under 2—

(1) No award.	
(2) No award.	
(3) No award.	
(4) No award.	

Best fat steer calf under 1 year—

(1) William Tossey & Son, Marysville, Ohio.....	15 00
(2) No award.	
(3) No award.	

Champion, best bull, any age—

(1) William Tossey & Son, Marysville, Ohio.....	20 00
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Champion, best cow or heifer, any age—

(1) J. H. Martz, Greenville, Ohio.....	20 00
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CLASS XXIV—ABERDEEN-ANGUS.

(J. H. Skinner, Lafayette, Ind., Judge.)

Bull 3 years old and over—	
(1) Wilmer N. Foster, Attica, Ind.....	\$ 15 00
(2) B. B. Johnson & Son, Atlanta, Ind.....	10 00
(3) Simpson & Hogue, Vincennes, Ind.....	5 00
Bull 2 years old and under 3—	
(1) Wilmer N. Foster, Attica, Ind.....	10 00
(2) William Avery, Waldron, Ind.....	7 00
(3) David Hadley & Son, Danville, Ind.....	4 00
Bull 1 year old and under 2—	
(1) Simpson & Hogue, Vincennes, Ind.....	8 00
(2) Henderson & Sons, Lebanon, Ind.....	6 00
(3) B. B. Johnson & Son, Atlanta, Ind.....	3 00
Bull calf under 1 year—	
(1) B. B. Johnson, Atlanta, Ind.....	5 00
(2) Henderson & Sons, Lebanon, Ind.....	3 00
(3) Simpson & Hogue, Vincennes, Ind.....	2 00
Cow 2 years old and over—	
(1) Wilmer N. Foster, Attica, Ind.....	15 00
(2) Henderson & Sons, Lebanon, Ind.....	10 00
(3) B. B. Johnson & Son, Atlanta, Ind.....	5 00
Cow 2 years old and under 3—	
(1) Wilmer N. Foster, Attica, Ind.....	10 00
(2) Simpson & Hogue, Vincennes, Ind.....	7 00
(3) Henderson & Sons, Lebanon, Ind.....	4 00
Heifer 1 year old and under 2—	
(1) Wilmer N. Foster, Attica, Ind.....	8 00
(2) Simpson & Hogue, Vincennes, Ind.....	6 00
(3) David Hadley & Son, Danville, Ind.....	3 00
Heifer calf under 1 year—	
(1) Wilmer N. Foster, Attica, Ind.....	5 00
(2) B. B. Johnson & Son, Atlanta, Ind.....	3 00
(3) B. B. Johnson & Son, Atlanta, Ind.....	2 00
Four animals, either sex, the get of one sire—	
(1) Wilmer N. Foster, Attica, Ind.....	10 00
(2) B. B. Johnson & Son, Atlanta, Ind.....	7 00
(3) Simpson & Hogue, Vincennes, Ind.....	5 00
Two animals, either sex, the produce of one cow—	
(1) Wilmer N. Foster, Attica, Ind.....	10 00
(2) Wilmer N. Foster, Attica, Ind.....	7 00
(3) No award.	
Exhibitor's herd—	
(1) Wilmer N. Foster, Attica, Ind.....	20 00
(2) Henderson & Sons, Lebanon, Ind.....	10 00

Breeder's herd—

(1) B. B. Johnson & Sons, Atlanta, Ind.....	20 00
(2) Henderson & Sons, Lebanon, Ind.....	10 00

Best fat steer 2 years old and under 3—

(1) I. W. Coon, Jr., Newtown, Ind.....	20 00
(2) Lew Kerr, Newtown, Ind.....	15 00
(3) No award.	
(4) No award.	

Best fat steer 1 year old and under 2—

(1) Charles T. Bowman, Edinburg, Ind.....	20 00
(2) Lew Kerr, Newtown, Ind.....	15 00
(3) I. W. Coon, Jr., Newtown, Ind.....	10 00
(4) No award.	

Fat steer calf under 1 year—

(1) Lew Kerr, Newtown, Ind.....	15 00
(2) Lew Kerr, Newtown, Ind.....	10 00
(3) No award.	

Champion, best bull, any age—

(1) Wilmer N. Foster, Attica, Ind.....	20 00
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Champion, best cow or heifer, any age—

(1) Wilmer N. Foster, Attica, Ind.....	20 00
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CLASS XXV—AMERICAN ABERDEEN-ANGUS BREEDERS' ASSOCIATION SPECIAL PREMIUMS.

(J. H. Skinner, Lafayette, Ind., Judge.)

Bull 3 years old or over—

(1) Wilmer N. Foster, Attica, Ind.....	\$ 14 00
(2) B. B. Johnson & Son, Atlanta, Ind.....	9 00
(3) Simpson & Hogue, Vincennes, Ind.....	6 00
(4) Henderson & Sons, Lebanon, Ind.....	4 00
(5) No award.	
(6) No award.	

Bull 2 years old and under 3—

(1) Wilmer N. Foster, Attica, Ind.....	14 00
(2) William Avery, Waldron, Ind.....	9 00
(3) David Hadley & Son, Danville, Ind.....	6 00
(4) No award.	
(5) No award.	
(6) No award.	

Bull 1 year old and under 2—

(1) Simpson & Hogue, Vincennes, Ind.....	14 00
(2) Henderson & Sons, Lebanon, Ind.....	8 00
(3) B. B. Johnson & Son, Atlanta, Ind.....	3 00
(4) No award.	
(5) No award.	
(6) No award.	

Bull under 1 year—

(1) B. B. Johnson & Son, Atlanta, Ind.....	14 00
(2) Henderson & Sons, Lebanon, Ind.....	8 00
(3) Simpson & Hogue, Vincennes, Ind.....	6 00
(4) David Hadley & Son, Danville, Ind.....	4 00
(5) No award.	
(6) No award.	

Cow 3 years old or over—

(1) Wilmer N. Foster, Attica, Ind.....	14 00
(2) Henderson & Sons, Lebanon, Ind.....	9 00
(3) B. B. Johnson & Son, Atlanta, Ind.....	6 00
(4) B. B. Johnson & Son, Atlanta, Ind.....	4 00
(5) Wilmer N. Foster, Attica, Ind.....	3 00
(6) Simpson & Hogue, Vincennes, Ind.....	2 00

Cow 2 years old and under 3—

(1) Wilmer N. Foster, Attica, Ind.....	14 00
(2) Simpson & Hogue, Vincennes, Ind.....	9 00
(3) Henderson & Sons, Lebanon, Ind.....	6 00
(4) B. B. Johnson & Son, Atlanta, Ind.....	4 00
(5) William Avery, Waldron, Ind.....	3 00
(6) Simpson & Hogue, Vincennes, Ind.....	2 00

Heifer 1 year old and under 2—

(1) Wilmer N. Foster, Attica, Ind.....	14 00
(2) Simpson & Hogue, Vincennes, Ind.....	8 00
(3) David Hadley & Son, Danville, Ind.....	6 00
(4) William Avery, Waldron, Ind.....	4 00
(5) B. B. Johnson & Son, Atlanta, Ind.....	3 00
(6) Simpson & Hogue, Vincennes, Ind.....	2 00

Heifer under 1 year—

(1) Wilmer N. Foster, Attica, Ind.....	14 00
(2) B. B. Johnson & Son, Atlanta, Ind.....	8 00
(3) B. B. Johnson & Son, Atlanta, Ind.....	6 00
(4) Simpson & Hogue, Vincennes, Ind.....	4 00
(5) William Avery, Waldron, Ind.....	3 00
(6) Henderson & Sons, Lebanon, Ind.....	2 00

CLASS XXVI—SPECIALS FOR INDIANA ABERDEEN-ANGUS
BREEDERS.

(J. H. Skinner, Lafayette, Ind., Judge.)

Bull 2 years old and under 3—

(1) Wilmer N. Foster, Attica, Ind.....	\$ 15 00
(2) William Avery, Waldron, Ind.....	12 00
(3) David Hadley & Son, Danville, Ind.....	11 00
(4) No award.	
(5) No award.	

Bull 1 year old and under 2—

(1) Simpson & Hogue, Vincennes, Ind.....	15 00
(2) Henderson & Sons, Lebanon, Ind.....	12 00
(3) B. B. Johnson & Son, Atlanta, Ind.....	11 00
(4) No award.	
(5) No award.	

Bull under 1 year—

(1) B. B. Johnson & Son, Atlanta, Ind.....	15 00
(2) Henderson & Sons, Lebanon, Ind.....	12 00
(3) Simpson & Hogue, Vincennes, Ind.....	11 00
(4) David Hadley & Son, Danville, Ind.....	9 00
(5) No award.	

Cow 2 years old and under 3—

(1) Wilmer N. Foster, Attica, Ind.....	15 00
(2) Simpson & Hogue, Vincennes, Ind.....	12 00
(3) Henderson & Sons, Lebanon, Ind.....	11 00
(4) B. B. Johnson & Son, Atlanta, Ind.....	9 00
(5) William Avery, Waldron, Ind.....	7 00

Heifer 1 year old and under 2—

(1) Wilmer N. Foster, Attica, Ind.....	15 00
(2) Simpson & Hogue, Vincennes, Ind.....	12 00
(3) David Hadley & Son, Danville, Ind.....	11 00
(4) William Avery, Waldron, Ind.....	9 00
(5) B. B. Johnson, Atlanta, Ind.....	6 00

Heifer under 1 year—

(1) Wilmer N. Foster, Attica, Ind.....	15 00
(2) B. B. Johnson & Son, Atlanta, Ind.....	12 00
(3) B. B. Johnson & Son, Atlanta, Ind.....	11 00
(4) Simpson & Hogue, Vincennes, Ind.....	9 00
(5) William Avery, Waldron, Ind.....	6 00

Young herd—

(1) Simpson & Hogue, Vincennes, Ind.....	40 00
(2) B. B. Johnson & Son, Atlanta, Ind.....	20 00

Steer 2 years old and under 3—

- | | |
|--|-------|
| (1) Lew Kerr, Newtown, Ind..... | 20 00 |
| (2) I. W. Coon, Jr., Newtown, Ind..... | 15 00 |
| (3) No award. | |

Steer 1 year old and under 2—

- | | |
|---|-------|
| (1) Charles T. Bowman, Edinburg, Ind..... | 20 00 |
| (2) Lew Kerr, Newtown, Ind..... | 15 00 |
| (3) I. W. Coon, Jr., Newtown, Ind..... | 10 00 |

Steer under 1 year—

- | | |
|--|-------|
| (1) Lew Kerr, Newtown, Ind..... | 20 00 |
| (2) Lew Kerr, Newtown, Ind..... | 15 00 |
| (3) David Hadley & Son, Danville, Ind..... | 10 00 |

Three best steers shown by one exhibitor—

- | | |
|---------------------------------|-------|
| (1) Lew Kerr, Newtown, Ind..... | 20 00 |
|---------------------------------|-------|

CLASS XXVII—GALLOWAYS.

(C. E. McLane, Danville, Ind., Judge.)

Bull 3 years old and over—

- | | |
|---|---------|
| (1) No award. | |
| (2) No award. | |
| (3) C. D. McPherson, Fairfield, Ia..... | \$ 5 00 |

Bull 2 years old and under 3—

- | | |
|---|------|
| (1) No award. | |
| (2) C. D. McPherson, Fairfield, Ia..... | 7 00 |
| (3) No award. | |

Bull 1 year old and under 2—

- | | |
|---|------|
| (1) C. D. McPherson, Fairfield, Ia..... | 8 00 |
| (2) No award. | |
| (3) C. D. McPherson, Fairfield, Ia..... | 3 00 |

Bull calf under 1 year—

- | | |
|---|------|
| (1) C. D. McPherson, Fairfield, Ia..... | 5 00 |
| (2) C. P. McPherson, Fairfield, Ia..... | 3 00 |
| (3) No award. | |

Cow 3 years old and over—

- | | |
|---|-------|
| (1) C. D. McPherson, Fairfield, Ia..... | 15 00 |
| (2) C. D. McPherson, Fairfield, Ia..... | 10 00 |
| (3) No award. | |

Cow 2 years old and under 3—

- | | |
|---|-------|
| (1) C. D. McPherson, Fairfield, Ia..... | 10 00 |
| (2) No award. | |
| (3) C. D. McPherson, Fairfield, Ia..... | 4 00 |

Cow 1 year old and under 2—

- | | |
|---|------|
| (1) C. D. McPherson, Fairfield, Ia..... | 8 00 |
| (2) C. D. McPherson, Fairfield, Ia..... | 6 00 |
| (3) No award. | |

Heifer calf under 1 year —	
(1) C. D. McPherson, Fairfield, Ia.....	5 00
(2) C. D. McPherson, Fairfield, Ia.....	3 00
(3) No award.	
Four animals, either sex, the get of one sire—	
(1) C. D. McPherson, Fairfield, Ia.....	10 00
(2) No award.	
(3) No award.	
Two animals, either sex, the produce of one cow—	
(1) C. D. McPherson, Fairfield, Ia.....	10 00
(2) No award.	
(3) No award.	
Exhibitor's herd—	
(1) No award.	
(2) No award.	
Breeder's herd—	
(1) C. D. McPherson, Fairfield, Ia.....	20 00
(2) No award.	
Champion, best bull, any age—	
(1) No award.	
Champion, best cow or heifer, any age—	
(1) C. D. McPherson, Fairfield, Ia.....	20 00

CLASS XXVIII—GRAND CHAMPIONS (OPEN TO ALL BREEDS).

(John Hooker, New London, Ohio; J. H. Skinner, Lafayette, Ind.; John C. Baker, Manhattan, Ill., Judges.)

Best steer, any age or breed—	
(1) Clem Graves, Bunker Hill, Ind.....	\$ 50 00
(2) Lew Kerr, Newtown, Ind.....	25 00

CATTLE. (DAIRY BREEDS.)

CLASS XXIX—JERSEYS.

(David D. Mills, Danville, Ind., Judge.)

Bull 3 years old and over—	
(1) H. H. Wheatcraft, Greenwood, Ind.....	\$ 20 00
(2) No award.	
(3) No award.	
Bull 2 years old and under 3—	
(1) H. H. Wheatcraft, Greenwood, Ind.....	15 00
(2) J. W. Taylor, Crawfordsville, Ind.....	10 00
(3) No award.	

Bull 1 year old and under 2—

(1) H. H. Wheatcraft, Greenwood, Ind.....	10 00
(2) D. F. Lee, Zionsville, Ind.....	7 00
(3) H. H. Wheatcraft, Greenwood, Ind.....	7 00

Bull calf under 1 year—

(1) J. W. Taylor, Crawfordsville, Ind.....	7 00
(2) H. H. Wheatcraft, Greenwood, Ind.....	5 00
(3) No award.	

Cow 3 years old and over—

(1) J. W. Taylor, Crawfordsville, Ind.....	20 00
(2) H. H. Wheatcraft, Greenwood, Ind.....	12 00
(3) H. H. Wheatcraft, Greenwood, Ind.....	6 00

Cow 2 years old and under 3—

(1) H. H. Wheatcraft, Greenwood, Ind.....	15 00
(2) H. H. Wheatcraft, Greenwood, Ind.....	10 00
(3) J. W. Taylor, Crawfordsville, Ind.....	5 00

Heifer 1 year old and under 2—

(1) H. H. Wheatcraft, Greenwood, Ind.....	10 00
(2) H. H. Wheatcraft, Greenwood, Ind.....	7 00
(3) H. H. Wheatcraft, Greenwood, Ind.....	4 00

Heifer calf under 1 year—

(1) D. F. Lee, Zionsville, Ind.....	7 00
(2) D. F. Lee, Zionsville, Ind.....	5 00
(3) H. H. Wheatcraft, Greenwood, Ind.....	3 00

Four animals, either sex, the get of one sire—

(1) H. H. Wheatcraft, Greenwood, Ind.....	15 00
(2) H. H. Wheatcraft, Greenwood, Ind.....	10 00
(3) No award.	

Two animals, either sex, the produce of one cow—

(1) H. H. Wheatcraft, Greenwood, Ind.....	15 00
(2) H. H. Wheatcraft, Greenwood, Ind.....	10 00
(3) No award.	

Exhibitors' herd—

(1) H. H. Wheatcraft, Greenwood, Ind.....	25 00
(2) J. W. Taylor, Crawfordsville, Ind.....	15 00

Breeders' herd—

(1) H. H. Wheatcraft, Greenwood, Ind.....	25 00
(2) H. H. Wheatcraft, Greenwood, Ind.....	15 00

Champion best bull, any age—

(1) H. H. Wheatcraft, Greenwood, Ind.....	25 00
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Champion, best cow or heifer, any age—

(1) H. H. Wheatcraft, Greenwood, Ind.....	25 00
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CLASS XXX—HOLSTEIN-FRIESIAN.

(David D. Mills, Danville, Ind., Judge.)

Bull 3 years old and over—	
(1) Wesley Purdum, Chillicothe, Ohio.....	\$ 12 00
(2) Wesley Purdum, Chillicothe, Ohio.....	8 00
(3) No award.	
Bull 2 years old and under 3—	
(1) No award.	
(2) No award.	
(3) No award.	
Bull 1 year old and under 2—	
(1) Wesley Purdum, Chillicothe, Ohio.....	6 00
(2) No award.	
(3) No award.	
Bull calf under 1 year—	
(1) Wesley Purdum, Chillicothe, Ohio.....	5 00
(2) No award.	
(3) No award.	
Cow 3 years old and over—	
(1) Wesley Purdum, Chillicothe, Ohio.....	12 00
(2) Wesley Purdum, Chillicothe, Ohio.....	8 00
(3) Wesley Purdum, Chillicothe, Ohio.....	4 00
Cow 2 years old and under 3—	
(1) Wesley Purdum, Chillicothe, Ohio.....	8 00
(2) Wesley Purdum, Chillicothe, Ohio.....	6 00
(3) No award.	
Heifer 1 year old and under 2—	
(1) Wesley Purdum, Chillicothe, Ohio.....	6 00
(2) Wesley Purdum, Chillicothe, Ohio.....	3 00
(3) No award.	
Heifer calf under 1 year—	
(1) Wesley Purdum, Chillicothe, Ohio.....	5 00
(2) Wesley Purdum, Chillicothe, Ohio.....	3 00
(3) Wesley Purdum, Chillicothe, Ohio.....	2 00
Four animals, either sex, the get of one sire—	
(1) Wesley Purdum, Chillicothe, Ohio.....	8 00
(2) Wesley Purdum, Chillicothe, Ohio.....	6 00
(3) No award.	
Two animals, either sex, the produce of one cow—	
(1) Wesley Purdum, Chillicothe, Ohio.....	8 00
(2) Wesley Purdum, Chillicothe, Ohio.....	6 00
(3) Wesley Purdum, Chillicothe, Ohio.....	3 00

Exhibitor's herd—	
(1) Wesley Purdum, Chillicothe, Ohio.....	15 00
(2) Wesley Purdum, Chillicothe, Ohio.....	10 00
Breeder's herd—	
(1) Wesley Purdum, Chillicothe, Ohio.....	15 00
(2) No award.	
Champion, best bull, any age—	
(1) Wesley Purdum, Chillicothe, Ohio.....	20 00
Champion, best cow or heifer, any age—	
(1) Wesley Purdum, Chillicothe, Ohio.....	20 00

CLASS XXXI—AYRSHIRES.

No awards made in this class.

CLASS XXXII—GUERNSEYS.

(David D. Mills, Danville, Ind., Judge.)

Bull 3 years old and over—	
(1) R. C. and W. D. Phelps, Westerville, Ohio.....	\$ 12 00
(2) No award.	
(3) No award.	
Bull 2 years old and under 3—	
(1) John Morgan, Plainfield, Ind.....	8 00
(2) No award.	
(3) No award.	
Bull 1 year old and under 2—	
(1) R. C. and W. D. Phelps, Westerville, Ohio.....	6 00
(2) No award.	
(3) No award.	
Bull calf under 1 year—	
(1) R. C. and W. D. Phelps, Westerville, Ohio.....	5 00
(2) John Morgan, Plainfield, Ind.....	3 00
(3) No award.	
Cow 3 years old and over—	
(1) R. C. and W. D. Phelps, Westerville, Ohio.....	12 00
(2) R. C. and W. D. Phelps, Westerville, Ohio.....	8 00
(3) John Morgan, Plainfield, Ind.....	4 00
Cow 2 years old and under 3—	
(1) R. C. and W. D. Phelps, Westerville, Ohio.....	8 00
(2) R. C. and W. D. Phelps, Westerville, Ohio.....	6 00
(3) No award.	
Heifer 1 year old and under 2—	
(1) R. C. and W. D. Phelps, Westerville, Ohio.....	6 00
(2) No award.	
(3) No award.	

Heifer calf under 1 year—

(1) R. C. and W. D. Phelps, Westerville, Ohio.....	5 00
(2) R. C. and W. D. Phelps, Westerville, Ohio.....	3 00
(1) John Morgan, Plainfield, Ind.....	8 00

Four animals, either sex, the get of one sire—

(1) R. C. and W. D. Phelps, Westerville, Ohio.....	8 00
(2) No award.	
(3) No award.	

Two animals, either sex, the produce of one cow—

(2) John Morgan, Plainfield, Ind.....	8 00
(2) No award.	
(3) No award.	

Exhibitor's herd—

- (1) No award.
- (2) No award.

Breeder's herd—

- (1) No award.
- (2) No award.

Champion, best bull, any age—

(1) R. C. and W. D. Phelps, Westerville, Ohio.....	20 00
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Champion, best cow or heifer, any age—

(1) R. C. and W. D. Phelps, Westerville, Ohio.....	20 00
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CLASS XXXIII—DAIRY AND CREAMERY PRODUCTS.

(H. N. Slater, Lafayette, Ind., Judge.)

For 20-pound tub creamery butter—

(1) E. L. Martin, New Carlisle, Ind.....	\$ 20 00
(2) Schlosser Bros., Plymouth, Ind.....	15 00
(3) Herbert Newby, Spiceland, Ind.....	10 00
(4) Mrs. Jerome Dunlap, Lafayette, Ind.....	5 00

For 10-pound tub dairy butter—

(1) Mrs. E. T. Drake, Edinburg, Ind.....	12 00
(2) Dan L. Sower, Rome City, Ind.....	8 00
(3) Mrs. Peter Raab, Lawrence, Ind.....	6 00
(4) No award.	

For 5 pounds dairy butter in 1-pound prints—

(1) Mrs. E. T. Drake, Edinburg, Ind.....	8 00
(2) McCain & Moore, Hortonville, Ind.....	6 00
(3) Chas. Lamont, Mooresville, Ind.....	4 00
(4) Mrs. Peter Raab, Lawrence, Ind.....	2 00

For 5 pounds dairy butter in 1-pound prints, made by former student of dairy school of Indiana—

- | | |
|--------------------------------------|------|
| (1) Edith Parsons, Clayton, Ind..... | 8 00 |
| (2) No award. | |
| (3) No award. | |
| (4) No award. | |

For full cream cheese, not less than 30 pounds—

- | | |
|---|-------|
| (1) Boyd & Drischel, Cambridge City, Ind..... | 15 00 |
| (2) McCain & Moore, Hortonville, Ind..... | 12 00 |
| (3) No award. | |
| (4) No award. | |

For cottage cheese, not less than 1 print—

- | | |
|--|------|
| (1) Mrs. W. B. Flick, Lawrence, Ind..... | 3 00 |
| (2) Mrs. Peter Raab, Lawrence, Ind..... | 2 00 |
| (3) Mrs. Jennie Droke, Southport, Ind..... | 1 00 |

For most fancy exhibit of print or ornamental butter work—

- | | |
|---|-------|
| (1) Schlosser Bros., Plymouth, Ind..... | 10 00 |
|---|-------|

For three young American cheese—

- | | |
|---|-------|
| (1) Boyd & Drischel, Cambridge City, Ind..... | 15 00 |
| (2) McCain & Moore, Hortonville, Ind..... | 10 00 |
| (3) No award. | |
| (4) No award. | |

SHEEP.

CLASS XXXIV—SHROPSHIRE.

(W. R. Weaver, Canton, Ill., Judge.)

Ram 2 years old or over—

- | | |
|--|----------|
| (1) Niagara Stock Farm, Lewiston, N. Y..... | \$ 12 00 |
| (2) Niagara Stock Farm, Lewiston, N. Y..... | 10 00 |
| (3) Henry L. Wardwell, Springfield Centre, N. Y..... | 6 00 |
| (4) F. W. Harding, Waukesha, Wis..... | 4 00 |
| (5) R. Cloyd, Stockwell, Ind..... | 3 00 |

Ram 1 year old and under 2—

- | | |
|--|-------|
| (1) Henry L. Wardwell, Springfield Centre, N. Y..... | 12 00 |
| (2) Henry L. Wardwell, Springfield Centre, N. Y..... | 10 00 |
| (3) Niagara Stock Farm, Lewiston, N. Y..... | 6 00 |
| (4) F. W. Harding, Waukesha, Wis..... | 4 00 |
| (5) F. W. Harding, Waukesha, Wis..... | 3 00 |

Ram lamb—

(1) Henry L. Wardwell, Springfield Centre, N. Y.....	12 00
(2) F. W. Harding, Waukesha, Wis.....	10 00
(3) Niagara Stock Farm, Lewiston, N. Y.....	6 00
(4) Niagara Stock Farm, Lewiston, N. Y.....	4 00
(5) Henry L. Wardwell, Springfield Centre, N. Y.....	4 00

Ewe 1 year old and under 2—

(1) Henry L. Wardwell, Springfield Centre, N. Y.....	12 00
(2) Henry L. Wardwell, Springfield Centre, N. Y.....	10 00
(3) F. W. Harding, Waukesha, Wis.....	6 00
(4) Niagara Stock Farm, Lewiston, N. Y.....	4 00
(5) Niagara Stock Farm, Lewiston, N. Y.....	3 00

Ewe lamb—

(1) Henry L. Wardwell, Springfield Centre, N. Y.....	12 00
(2) Henry L. Wardwell, Springfield Centre, N. Y.....	10 00
(3) Henry L. Wardwell, Springfield Centre, N. Y.....	6 00
(4) Niagara Stock Farm, Lewiston, N. Y.....	4 00
(5) Niagara Stock Farm, Lewiston, N. Y.....	3 00

Exhibitor's flock—

(1) Henry L. Wardwell, Springfield Centre, N. Y.....	12 00
(2) Niagara Stock Farm, Lewiston, N. Y.....	10 00
(3) F. W. Harding, Waukesha, Wis.....	6 00
(4) Millett & Baltzell, Portland, Ind.....	4 00
(5) Claud D. Storm, Mooresville, Ind.....	3 00

Breeder's flock—

(1) Henry L. Wardwell, Springfield Centre, N. Y.....	12 00
(2) Niagara Stock Farm, Lewiston, N. Y.....	10 00
(3) Millett & Baltzell, Portland, Ind.....	6 00
(4) Claud D. Storm, Mooresville, Ind.....	4 00
(5) No award.	

Best pen of five rams of any age, to be of same age and be bred and owned by the exhibitor—

(1) R. Cloyd, Stockwell, Ind.....	12 00
(2) Millett & Baltzell, Portland, Ind.....	10 00
(3) Henry Klinger, Lebanon, Ind.....	6 00
(4) Claud D. Storm, Mooresville, Ind.....	4 00
(5) No award.	

Champion ram, any age—

(1) Henry L. Wardwell, Springfield Centre, N. Y.....	20 00
--	-------

Champion ewe, any age—

(1) Henry L. Wardwell, Springfield Centre, N. Y.....	20 00
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CLASS XXXV—OXFORD DOWN.

Ram 2 years old or over—	
(1) Wm. A. McKerrow, Pewaukee, Wis.....	\$ 12 00
(2) Geo. McKerrow & Son, Pewaukee, Wis.....	7 00
(3) Wilson Bros., Muncie, Ind.....	5 00
Ram 1 year old and under 2—	
(1) Wm. A. McKerrow, Pewaukee, Wis.....	12 00
(2) Wilson Bros., Muncie, Ind.....	7 00
(3) Wm. A. McKerrow, Pewaukee, Wis.....	5 00
Ram lamb—	
(1) Geo. McKerrow & Son, Pewaukee, Wis.....	12 00
(2) Geo. McKerrow & Son, Pewaukee, Wis.....	7 00
(3) Wm. A. McKerrow, Pewaukee, Wis.....	5 00
Ewe 1 year old and under 2—	
(1) Wm. A. McKerrow, Pewaukee, Wis.....	12 00
(2) Wm. A. McKerrow, Pewaukee, Wis.....	7 00
(3) Wilson Bros., Muncie, Ind.....	5 00
Ewe lamb—	
(1) Wm. A. McKerrow, Pewaukee, Wis.....	12 00
(2) Wm. A. McKerrow, Pewaukee, Wis.....	7 00
(3) Wilson Bros., Muncie, Ind.....	5 00
Exhibitor's flock—	
(1) Wm. A. McKerrow, Pewaukee, Wis.....	10 00
(2) Wilson Bros., Muncie, Ind.....	6 00
(3) No award.	
Breeder's flock—	
(1) Geo. McKerrow & Son, Pewaukee, Wis.....	10 00
(2) Wilson Bros., Muncie, Ind.....	6 00
(3) No award.	
Pen of five rams, any age, all of same age and bred and owned by the exhibitor—	
(1) Geo. McKerrow & Son, Pewaukee, Wis.....	10 00
(2) Wilson Bros., Muncie, Ind.....	5 00
Champion ram, any age—	
(1) Wm. A. McKerrow, Pewaukee, Wis.....	10 00
Champion ewe, any age—	
(1) Wm. A. McKerrow, Pewaukee, Wis.....	10 00

CLASS XXXVI—SOUTHDOWN.

Ram 2 years old or over—	
(1) Wm. A. McKerrow, Pewaukee, Wis.....	\$ 12 00
(2) Geo. McKerrow & Son, Pewaukee, Wis.....	7 00
(3) Wilson Bros., Muncie, Ind.....	5 00

Ram 1 year old and under 2—	
(1) Wm. A. McKerrow, Pewaukee, Wis.....	12 00
(2) Geo. McKerrow & Son, Pewaukee, Wis.....	7 00
(3) Wilson Bros., Muncie, Ind.....	5 00
Ram Lamb—	
(1) Wm. A. McKerrow, Pewaukee, Wis.....	12 00
(2) Geo. McKerrow & Son, Pewaukee, Wis.....	7 00
(3) Wilson Bros., Muncie, Ind.....	5 00
Ewe 1 year old and under 2—	
(1) Wm. A. McKerrow, Pewaukee, Wis.....	12 00
(2) Wm. A. McKerrow, Pewaukee, Wis.....	7 00
(3) Wilson Bros., Muncie, Ind.....	5 00
Ewe lamb—	
(1) Wm. A. McKerrow, Pewaukee, Wis.....	12 00
(2) Wm. A. McKerrow, Pewaukee, Wis.....	7 00
(3) Wilson Bros., Muncie, Ind.....	5 00
Exhibitor's flock—	
(1) Wm. A. McKerrow, Pewaukee, Wis.....	10 00
(2) Wilson Bros., Muncie, Ind.....	6 00
(3) No award.	
Breeder's flock—	
(1) Wm. A. McKerrow, Pewaukee, Wis.....	10 00
(2) Wilson Bros., Muncie, Ind.....	6 00
(3) No award.	
Pen of five rams, any age, to be of same age and bred and owned by the exhibitor—	
(1) Geo. McKerrow & Son, Pewaukee, Wis.....	10 00
(2) Wilson Bros., Muncie, Ind.....	5 00
Champion ram, any age—	
(1) Wm. A. McKerrow, Pewaukee, Wis.....	10 00
Champion ewe, any age—	
(1) Wm. A. McKerrow, Pewaukee, Wis.....	10 00

CLASS XXXVII—HAMPSHIRE DOWN.

(W. R. Weaver, Canton, Ill., and Uriah Privett, Greensburg, Ind., Judges.)

Ram 2 years old or over—	
(1) Chilmark Farm, Ossining, N. Y.....	\$ 8 00
(2) James West, Montpelier, Ind.....	4 00
(3) Chilmark Farm, Ossining, N. Y.....	2 00
Ram 1 year old and under 2—	
(1) Chilmark Farm, Ossining, N. Y.....	8 00
(2) James West, Montpelier, Ind.....	3 00
(3) Chilmark Farm, Ossining, N. Y.....	2 00

Ram lamb—	
(1) James West, Montpelier, Ind.....	8 00
(3) Chilmark Farm, Ossining, N. Y.....	3 00
(3) James West, Montpelier, Ind.....	2 00
Ewe 1 year old and under 2—	
(1) Chilmark Farm, Ossining, N. Y.....	8 00
(2) Chilmark Farm, Ossining, N. Y.....	3 00
(3) Chilmark Farm, Ossining, N. Y.....	2 00
Ewe lamb—	
(1) Chilmark Farm, Ossining, N. Y.....	8 00
(2) James West, Montpelier, Ind.....	3 00
(3) Chilmark Farm, Ossining, N. Y.....	2 00
Exhibitor's flock—	
(1) Chilmark Farm, Ossining, N. Y.....	6 00
(2) Chilmark Farm, Ossining, N. Y.....	3 00
Breeder's flock—	
(1) James West, Montpelier, Ind.....	6 00
(2) James West, Montpelier, Ind.....	3 00
Pen of five rams, any age, all to be of same age and bred and owned by the exhibitor—	
(1) No award.	
(2) No award.	
Champion ram, any age—	
(1) Chilmark Farm, Ossining, N. Y.....	6 00
Champion ewe, any age—	
(1) Chilmark Farm, Ossining, N. Y.....	6 00

CLASS XXXVIII—COTSWOLD.

(F. C. Phelps, New Castle, Ind., and W. R. Weaver, Canton, Ill., Judges.)

Ram 2 years old or over—	
(1) Wilson Bros., Muncie, Ind.....	\$ 12 00
(2) F. W. Harding, Waukesha, Wis.....	7 00
(3) Wilson Bros., Muncie, Ind.....	5 00
Ram 1 year old and under 2—	
(1) F. W. Harding, Waukesha, Wis.....	12 00
(2) Wilson Bros., Muncie, Ind.....	7 00
(3) Wilson Bros., Muncie, Ind.....	5 00
Ram lamb—	
(1) F. W. Harding, Waukesha, Wis.....	12 00
(2) Wilson Bros., Muncie, Ind.....	7 00
(3) F. W. Harding, Waukesha, Wis.....	5 00
Ewe 1 year old and under 2—	
(1) F. W. Harding, Waukesha, Wis.....	12 00
(2) F. W. Harding, Waukesha, Wis.....	7 00
(3) F. W. Harding, Waukesha, Wis.....	5 00

Ewe lamb—

(1) F. W. Harding, Waukesha, Wis.....	12 00
(2) Wilson Bros., Muncie, Ind.....	7 00
(3) F. W. Harding, Waukesha, Wis.....	5 00

Exhibitor's flock—

(1) F. W. Harding, Waukesha, Wis.....	10 00
(2) F. W. Harding, Waukesha, Wis.....	6 00
(3) Wilson Bros., Muncie, Ind.....	4 00

Breeder's flock—

(1) Wilson Bros., Muncie, Ind.....	10 00
(2) Wilson Bros., Muncie, Ind.....	6 00
(3) No award.	

Pen of five rams, any age, all to be of same age and bred and owned by the exhibitor—

(1) Wilson Bros., Muncie, Ind.....	10 00
(2) Wilson Bros., Muncie, Ind.....	5 00

Champion ram, any age—

(1) Wilson Bros., Muncie, Ind.....	10 00
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Champion ewe, any age—

(1) Wilson Bros., Muncie, Ind.....	10 00
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CLASS XXXIX—DORSETS.

Ram 2 years old or over—

(1) J. A. Wing, Mechanicsburg, Ohio.....	\$ 8 00
(2) No award.	
(3) No award.	

Ram 1 year old and under 2—

(1) J. A. Wing, Mechanicsburg, Ohio.....	8 00
(2) No award.	
(3) No award.	

Ram lamb—

(1) J. A. Wing, Mechanicsburg, Ohio.....	8 00
(2) J. A. Wing, Mechanicsburg, Ohio.....	3 00
(3) No award.	

Ewe 1 year old and under 2—

(1) J. A. Wing, Mechanicsburg, Ohio.....	8 00
(2) J. A. Wing, Mechanicsburg, Ohio.....	3 00
(3) J. A. Wing, Mechanicsburg, Ohio.....	2 00

Ewe lamb—

(1) J. A. Wing, Mechanicsburg, Ohio.....	8 00
(2) J. A. Wing, Mechanicsburg, Ohio.....	3 00
(3) J. A. Wing, Mechanicsburg, Ohio.....	2 00

Exhibitor's flock—	
(1) J. A. Wing, Mechanicsburg, Ohio.....	6 00
(2) No award.	
(3) No award.	
Breeder's flock—	
(1) J. A. Wing, Mechanicsburg, Ohio.....	6 00
(2) J. A. Wing, Mechanicsburg, Ohio.....	3 00
(3) No award.	
Champion ram, any age—	
(1) J. A. Wing, Mechanicsburg, Ohio.....	6 00
Champion ewe, any age—	
(1) J. A. Wing, Mechanicsburg, Ohio.....	6 00

CLASS XL—RAMBOUILLET.

(U. C. Brouse, Kendallville, Ind., Judge.)

Ram 2 years old or over—	
(1) F. W. Harding, Waukesha, Wis.....	\$ 10 00
(2) F. W. Harding, Waukesha, Wis.....	6 00
(3) John E. Webb, Southport, Ind.....	4 00
Ram 1 year old and under 2—	
(1) F. W. Harding, Waukesha, Wis.....	10 00
(2) F. W. Harding, Waukesha, Wis.....	6 00
(3) John E. Webb, Southport, Ind.....	4 00
Ram lamb—	
(1) F. W. Harding, Waukesha, Wis.....	10 00
(2) John E. Webb, Southport, Ind.....	6 00
(3) F. W. Harding, Waukesha, Wis.....	4 00
Ewe 2 years old or over—	
(1) John E. Webb, Southport, Ind.....	10 00
(2) John E. Webb, Southport, Ind.....	6 00
(3) F. W. Harding, Waukesha, Wis.....	4 00
Ewe 1 year old and under 2—	
(1) John E. Webb, Southport, Ind.....	10 00
(2) F. W. Harding, Waukesha, Wis.....	6 00
(3) F. W. Harding, Waukesha, Wis.....	4 00
Ewe lamb—	
(1) F. W. Harding, Waukesha, Wis.....	10 00
(2) F. W. Harding, Waukesha, Wis.....	6 00
(3) F. W. Harding, Waukesha, Wis.....	4 00
Exhibitor's flock—	
(1) F. W. Harding, Waukesha, Wis.....	10 00
(2) John E. Webb, Southport, Ind.....	6 00
(3) F. W. Harding, Waukesha, Wis.....	4 00

Breeder's flock—	
(1) F. W. Harding, Waukesha, Wis.....	10 00
(2) John E. Webb, Southport, Ind.....	6 00
(3) No award.	
Champion ram, any age—	
(1) F. W. Harding, Waukesha, Wis.....	10 00
Champion ewe, any age—	
(1) John E. Webb, Southport, Ind.....	10 00

CLASS XLI—AMERICAN MERINOS (DELAINE TYPE).

(U. C. Brouse, Kendallville, Ind., Judge.)

Ram 2 years old or over—	
(1) R. D. Williamson, Xenia, Ohio.....	\$ 8 00
(2) G. E. Helsler, Herring, Ohio.....	5 00
(3) R. D. Williamson, Xenia, Ohio.....	3 00
Ram 1 year old and under 2—	
(1) G. E. Helsler, Herring, Ohio.....	8 00
(2) R. D. Williamson, Xenia, Ohio.....	5 00
(3) G. E. Helsler, Herring, Ohio.....	3 00
Ram lamb—	
(1) G. E. Helsler, Herring, Ohio.....	8 00
(2) R. D. Williamson, Xenia, Ohio.....	5 00
(3) G. E. Helsler, Herring, Ohio.....	3 00
Ewe 2 years old and over—	
(1) R. D. Williamson, Xenia, Ohio.....	8 00
(2) G. E. Helsler, Herring, Ohio.....	5 00
(3) R. D. Williamson, Xenia, Ohio.....	8 00
Ewe 1 year old and under 2—	
(1) G. E. Helsler, Herring, Ohio.....	8 00
(2) R. D. Williamson, Xenia, Ohio.....	5 00
(3) G. E. Helsler, Herring, Ohio.....	3 00
Ewe lamb—	
(1) G. E. Helsler, Herring, Ohio.....	8 00
(2) G. E. Helsler, Herring, Ohio.....	5 00
(3) G. E. Helsler, Herring, Ohio.....	3 00
Exhibitor's flock—	
(1) G. E. Helsler, Herring, Ohio.....	5 00
(2) R. D. Williamson, Xenia, Ohio.....	3 00
(3) R. D. Williamson, Xenia, Ohio.....	2 00
Breeder's flock—	
(1) G. E. Helsler, Herring, Ohio.....	5 00
(2) R. D. Williamson, Xenia, Ohio.....	3 00
(3) No award.	

Champion ram, any age—	
(1) R. D. Williamson, Xenia, Ohio.....	8 00
Champion ewe, any age—	
(1) R. D. Williamson, Xenia, Ohio.....	8 00

CLASS XLII—MERINOS.

(U. C. Brouse, Kendallville, Ind., Judge.)

Ram 2 years old or over—	
(1) R. D. Williamson, Xenia, Ohio.....	8 00
(2) G. E. Helser, Herring, Ohio.....	5 00
(3) R. D. Williamson, Xenia, Ohio.....	3 00
Ram 1 year old and under 2—	
(1) R. D. Williamson, Xenia, Ohio.....	8 00
(2) R. D. Williamson, Xenia, Ohio.....	5 00
(3) G. E. Helser, Herring, Ohio.....	3 00
Ram lamb—	
(1) R. D. Williamson, Xenia, Ohio.....	8 00
(2) R. D. Williamson, Xenia, Ohio.....	5 00
(3) R. D. Williamson, Xenia, Ohio.....	3 00
Ewe 2 years old or over—	
(1) R. D. Williamson, Xenia, Ohio.....	8 00
(2) G. E. Helser, Herring, Ohio.....	5 00
(3) R. D. Williamson, Xenia, Ohio.....	3 00
Ewe 1 year old and under 2—	
(1) R. D. Williamson, Xenia, Ohio.....	8 00
(2) G. E. Helser, Herring, Ohio.....	5 00
(3) G. E. Helser, Herring, Ohio.....	3 00
Ewe lamb—	
(1) R. D. Williamson, Xenia, Ohio.....	8 00
(2) R. D. Williamson, Xenia, Ohio.....	5 00
(3) G. E. Helser, Herring, Ohio.....	3 00
Exhibitor's flock—	
(1) R. D. Williamson, Xenia, Ohio.....	5 00
(2) G. E. Helser, Herring, Ohio.....	3 00
(3) R. D. Williamson, Xenia, Ohio.....	2 00
Breeder's flock—	
(1) R. D. Williamson, Xenia, Ohio.....	5 00
(2) No award.	
(3) No award.	
Champion ram, any age—	
(1) R. D. Williamson, Xenia, Ohio.....	8 00
Champion ewe, any age—	
(1) R. D. Williamson, Xenia, Ohio.....	8 00

CLASS XLIII—CHEVIOTS.

Ram 2 years old or over—

(1) G. W. Parnell, Wingate, Ind.....	\$ 8 00
(2) G. W. Parnell, Wingate, Ind.....	4 00
(3) No award.	

Ram 1 year old and under 2—

(1) G. W. Parnell, Wingate, Ind.....	5 00
(2) G. W. Parnell, Wingate, Ind.....	3 00
(3) G. W. Parnell, Wingate, Ind.....	2 00

Ram lamb—

(1) G. W. Parnell, Wingate, Ind.....	5 00
(2) G. W. Parnell, Wingate, Ind.....	3 00
(3) G. W. Parnell, Wingate, Ind.....	2 00

Ewe 2 years old or over—

(1) G. W. Parnell, Wingate, Ind.....	8 00
(2) G. W. Parnell, Wingate, Ind.....	4 00
(3) G. W. Parnell, Wingate, Ind.....	2 00

Ewe 1 year old and under 2—

(1) G. W. Parnell, Wingate, Ind.....	5 00
(2) G. W. Parnell, Wingate, Ind.....	3 00
(3) No award.	

Ewe lamb—

- (1) No award.
- (2) No award.
- (3) No award.

Exhibitor's flock—

(1) G. W. Parnell, Wingate, Ind.....	5 00
(2) No award.	
(3) No award.	

Breeder's flock—

(1) G. W. Parnell, Wingate, Ind.....	5 00
(2) No award.	
(3) No award.	

Champion ram, any age—

(1) G. W. Parnell, Wingate, Ind.....	5 00
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Champion ewe, any age—

(1) G. W. Parnell, Wingate, Ind.....	5 00
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SWINE.

CLASS XLIV—BERKSHIRE.

(Lloyd Mugg, Kokomo, Ind., Judge.)

Boar 2 years old or over—

(1) Etzler & Moses, Decatur, Ind.....	\$ 12 00
(2) I. N. Barker & Son, Thorntown, Ind.....	8 00
(3) Hood Farm, Lowell, Mass.....	4 00

Boar 1 year old and under 2—

(1) Hood Farm, Lowell, Mass.....	10 00
(2) Hood Farm, Lowell, Mass.....	7 00
(3) I. N. Barker & Son, Thorntown, Ind.....	3 00

Boar 6 months old and under 12—

(1) Etzler & Moses, Decatur, Ind.....	8 00
(2) I. N. Barker & Son, Thorntown, Ind.....	5 00
(3) J. G. Yeager, Shelbyville, Ky.....	3 00
(4) Etzler & Moses, Decatur, Ind.....	2 00

Boar under 6 months—

(1) Etzler & Moses, Decatur, Ind.....	8 00
(2) I. N. Barker & Son, Thorntown, Ind.....	5 00
(3) I. N. Barker & Son, Thorntown, Ind.....	3 00
(4) I. N. Barker & Son, Thorntown, Ind.....	2 00

Sow 2 years old or over—

(1) J. G. Yeager, Shelbyville, Ky.....	12 00
(2) J. G. Yeager, Shelbyville, Ky.....	8 00
(3) I. N. Barker & Son, Thorntown, Ind.....	4 00

Sow 1 year old and under 2—

(1) Hood Farm, Lowell, Mass.....	10 00
(2) Hood Farm, Lowell, Mass.....	7 00
(3) Hood Farm, Lowell, Mass.....	3 00

Sow 6 months old and under 12—

(1) Hood Farm, Lowell, Mass.....	8 00
(2) I. N. Barker & Son, Thorntown, Ind.....	5 00
(3) I. N. Barker & Son, Thorntown, Ind.....	3 00
(4) Hood Farm, Lowell, Mass.....	2 00

Sow under 6 months—

(1) Etzler & Moses, Decatur, Ind.....	8 00
(2) Etzler & Moses, Decatur, Ind.....	5 00
(3) I. N. Barker & Son, Thorntown, Ind.....	3 00
(4) Etzler & Moses, Decatur, Ind.....	2 00

Boar and three sows, any age—

(1) Hood Farm, Lowell, Mass.....	20 00
(2) Etzler & Moses, Decatur, Ind.....	12 00
(3) Hood Farm, Lowell, Mass.....	9 00
(4) I. N. Barker & Son, Thorntown, Ind.....	6 00

Five pigs under 6 months—

(1) Etzler & Moses, Decatur, Ind.....	12 00
(2) I. N. Barker & Son, Thorntown, Ind.....	8 00
(3) J. G. Yeager, Shelbyville, Ky.....	5 00
(4) I. N. Barker & Son, Thowntown, Ind.....	3 00

Pair pigs under 6 months—

(1) Etzler & Moses, Decatur, Ind.....	12 00
(2) I. N. Barker & Son, Thorntown, Ind.....	8 00
(3) I. N. Barker & Son, Thorntown, Ind.....	5 00
(4) Etzler & Moses, Decatur, Ind.....	3 00

Champion boar, any age—

(1) Etzler & Moses, Decatur, Ind.....	20 00
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Champion sow, any age—

(1) Hood Farm, Lowell, Mass.....	20 00
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CLASS XLV—POLAND CHINA.

(I. E. Hendricks, Wilmington, Ohio; Judge.)

Boar 2 years old or over—

(1) Locke & Wellington, Remington, Ind.....	\$ 12 00
(2) Wm. C. Hartman, Southport, Ind.....	8 00
(3) Lindley & Butler, Russiaville, Ind.....	4 00

Boar 1 year old and under 2—

(1) Smith, Ben F. Harmon & Co., Rensselaer, Ind.....	10 00
(2) Hunter & Co. and Brown, Morrow, Ohio.....	7 00
(3) A. S. Gilmour & Son, Greensburg, Ind.....	3 00

Boar 6 months old and under 12—

(1) J. W. Gartin & Sons, Burney, Ind.....	8 00
(2) H. M. Shuster, Remington, Ind.....	5 00
(3) Pumphrey Bros., Burney, Ind.....	3 00
(4) Arbuckle & Sidener, Hope, Ind.....	2 00

Boar under 6 months—

(1) Locke & Wellington, Remington, Ind.....	8 00
(2) Reveal & Duncan, Indianapolis, Ind.....	5 00
(3) Geo. Griffin, Remington, Ind.....	3 00
(4) Ben F. Smith, Harmon & Co., Rensselaer, Ind.....	2 00

Sow 2 years old or over—

(1) Locke & Wellington, Remington, Ind.....	12 00
(2) M. B. Graham, Remington, Ind.....	8 00
(3) Pumphrey Bros., Burney, Ind.....	4 00

Sow 1 year old and under 2—

(1) J. R. Harrod, Hope, Ind.	10 00
(2) K. E. Midkiff & Son, Shelbyville, Ind.	7 00
(3) Harcourt & Johnson, New Augusta, Ind.	3 00

Sow 6 months old and under 12—

(1) Locke & Wellington, Remington, Ind.	8 00
(2) Pumphrey Bros., Burney, Ind.	5 00
(3) Arbuckle & Sidener, Hope, Ind.	3 00
(4) Ben F. Smith, Harmon & Co., Rensselaer, Ind.	2 00

Sow under 6 months—

(1) Locke & Wellington, Remington, Ind.	8 00
(2) Reveal & Duncan, Indianapolis, Ind.	5 00
(3) Ben F. Smith, Harmon & Co., Rensselaer, Ind.	3 00
(4) Dickerson & Dickerson, Spencer, Ind.	2 00

Boar and three sows, any age—

(1) Locke & Wellington, Remington, Ind.	20 00
(2) Ben F. Smith, Harmon & Co., Rensselaer, Ind.	12 00
(3) Locke & Wellington, Remington, Ind.	9 00
(4) Arbuckle & Sidener, Hope, Ind.	6 00

Five pigs under 6 months—

(1) Locke & Wellington, Remington, Ind.	12 00
(2) Reveal & Duncan, Indianapolis, Ind.	8 00
(3) Ben F. Smith, Harmon & Co., Rensselaer, Ind.	5 00
(4) W. O. Canaday & Son, Anderson, Ind.	3 00

Pair pigs under 6 months—

(1) Locke & Wellington, Remington, Ind.	12 00
(2) Reveal & Duncan, Indianapolis, Ind.	8 00
(3) Ben F. Smith, Harmon & Co., Rensselaer, Ind.	5 00
(4) W. O. Canaday & Son, Anderson, Ind.	3 00

Champion boar, any age—

(1) Locke & Wellington, Remington, Ind.	20 00
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Champion sow, any age—

(1) J. R. Harrod, Hope, Ind.	20 00
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CLASS XLVI—CHESTER WHITE AND CHESHIRE.

(Frank F. Moore, Judge.)

Boar 2 years old or over—

(1) Gibson & Son, Muncie, Ind.	\$ 12 00
(2) Gibson & Son, Muncie, Ind.	8 00
(3) H. M. Smith, Mooresville, Ind.	4 00

Boar 1 year old and under 2—

(1) Hinshaw Bros., Zionsville, Ind.	10 00
(2) J. W. Taylor, Crawfordsville, Ind.	7 00
(3) Wood Bros., Franklin, Ind.	3 00

Boar 6 months old and under 12—

(1) Gibson & Son, Muncie, Ind.....	8 00
(2) J. W. Taylor, Crawfordsville, Ind.....	5 00
(3) Wood Bros., Franklin, Ind.....	3 00
(4) No award.	

Boar under 6 months—

(1) Hinshaw Bros., Zionsville, Ind.....	8 00
(2) H. M. Smith, Mooresville, Ind.....	5 00
(3) H. M. Smith, Mooresville, Ind.....	3 00
(4) W. W. Milner & Son, Thorntown, Ind.....	2 00

Sow 2 years old or over—

(1) Gibson & Son, Muncie, Ind.....	12 00
(2) J. W. Taylor, Crawfordsville, Ind.....	8 00
(3) Wood Bros., Franklin, Ind.....	4 00

Sow 1 year old and under 2—

(1) Gibson & Son, Muncie, Ind.....	10 00
(2) Wood Bros., Franklin, Ind.....	7 00
(3) J. W. Taylor, Crawfordsville, Ind.....	3 00

Sow 6 months old and under 12—

(1) Hinshaw Bros., Zionsville, Ind.....	8 00
(2) Gibson & Son, Muncie, Ind.....	5 00
(3) J. W. Taylor, Crawfordsville, Ind.....	3 00
(4) Wood Bros., Franklin, Ind.....	2 00

Sow under 6 months—

(1) Hinshaw Bros., Zionsville, Ind.....	8 00
(2) W. W. Milner & Son, Thorntown, Ind.....	5 00
(3) H. M. Smith, Mooresville, Ind.....	3 00
(4) Ted Russell, Nora, Ind.....	2 00

Boar and three sows, any age—

(1) Gibson & Son, Muncie, Ind.....	20 00
(2) Hinshaw Bros., Zionsville, Ind.....	12 00
(3) J. W. Taylor, Crawfordsville, Ind.....	9 00
(4) Ted Russell, Nora, Ind.....	6 00

Five pigs under 6 months—

(1) Hinshaw Bros., Zionsville, Ind.....	12 00
(2) H. M. Smith, Mooresville, Ind.....	8 00
(3) J. W. Taylor, Crawfordsville, Ind.....	5 00
(4) Ted Russell, Nora, Ind.....	3 00

Pair pigs under 1 year—

(1) Hinshaw Bros., Zionsville, Ind.....	12 00
(2) Gibson & Son, Muncie, Ind.....	8 00
(3) No award.	
(4) Ted Russell, Nora, Ind.....	3 00

Champion boar, any age—

(1) Gibson & Son, Muncie, Ind. 20 00

Champion sow, any age—

(1) Gibson & Son, Muncie, Ind. 20 00

CLASS XLVH DUROC-JERSEY, TAMWORTH AND THIN RIND.

(D. W. Brown, Union City, Ind., Judge.)

Boar 2 years old or over—

(1) J. A. Teter, Remington, Ind. \$ 12 00

(2) Carl Scott, Muncie, Ind. 8 00

(3) J. D. Nidlinger, Decatur, Ind. 4 00

Boar 1 year old and under 2—

(1) J. D. Nidlinger, Decatur, Ind. 10 00

(2) Fred Kraschel & Son, Macon, Ill. 7 00

(3) Carl Scott, Muncie, Ind. 3 00

Boar 6 months old and under 12—

(1) C. W. May, Remington, Ind. 8 00

(2) J. D. Nidlinger, Decatur, Ind. 5 00

(3) J. D. Nidlinger, Decatur, Ind. 3 00

(4) Mahan Bros., Osborn, Ohio. 2 00

Boar under 6 months—

(1) J. D. Nidlinger, Decatur, Ind. 8 00

(2) Mahan Bros., Osborn, Ohio. 5 00

(3) Fred Kraschel & Son, Macon, Ill. 3 00

(4) C. J. Newby & Co., Carmel, Ind. 2 00

Sow 2 years old or over—

(1) J. D. Nidlinger, Decatur, Ind. 12 00

(2) Mahan Bros., Osborn, Ohio. 8 00

(3) M. G. Hamm & Son, Burlington, Ind. 4 00

Sow 1 year old and under 2—

(1) J. D. Nidlinger, Decatur, Ind. 10 00

(2) Mahan Bros., Osborn, Ohio. 7 00

(3) J. D. Nidlinger, Decatur, Ind. 3 00

Sow 6 months old and under 12—

(1) J. D. Nidlinger, Decatur, Ind. 8 00

(2) J. D. Nidlinger, Decatur, Ind. 5 00

(3) Mahan Bros., Osborn, Ohio. 3 00

(4) C. J. Newby & Co., Carmel, Ind. 2 00

Sow under 6 months—

(1) Mahan Bros., Osborn, Ohio. 8 00

(2) Mahan Bros., Osborn, Ohio. 5 00

(3) C. W. May, Remington, Ind. 3 00

(4) Carl Scott, Muncie, Ind. 2 00

Boar and three sows, any age—

(1) J. D. Nidlinger, Decatur, Ind.....	20 00
(2) Mahan Bros., Osborn, Ohio.....	12 00
(3) Mahan Bros., Osborn, Ohio.....	9 00
(4) Carl Scott, Muncie, Ind.....	6 00

Five pigs under 6 months—

(1) Mahan Bros., Osborn, Ohio.....	12 00
(2) J. D. Nidlinger, Decatur, Ind.....	8 00
(3) Fred Kraschal & Son, Macon, Ill.....	5 00
(4) J. A. Teter, Remington, Ind.....	3 00

Pair pigs under 6 months—

(1) Mahan Bros., Osborn, Ohio.....	12 00
(2) Mahan Bros., Osborn, Ohio.....	8 00
(3) J. D. Nidlinger, Decatur, Ind.....	5 00
(4) Fred Kraschal & Son, Macon, Ill.....	3 00

Champion boar, any age—

(1) J. D. Nidlinger, Decatur, Ind.....	20 00
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Champion sow, any age—

(1) J. D. Nidlinger, Decatur, Ind.....	20 00
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CLASS XLVIII—VICTORIA, LARGE YORKSHIRE AND SMALL YORKSHIRE.

No awards made in this class.

POULTRY.**CLASS XLIX—MEDITERRANEAN.****Black Minorca cock—**

(1) Elbert Bros., Alexandria, Ind.....	\$ 2 00
(2) T. B. Poe, Oakford, Ind.....	1 00
(3) Thos. M. Campbell, Darlington, Ind.....	Ribbon

Black Minorca hen—

(1) T. B. Poe, Oakford, Ind.....	3 00
(2) Fred Schlegel, Indianapolis, Ind.....	2 00
(3) T. B. Poe, Oakford, Ind.....	1 00

Black Minorca cockerel—

(1) T. B. Poe, Oakford, Ind.....	3 00
(2) T. B. Poe, Oakford, Ind.....	2 00
(3) A. F. Shaw, Carmel, Ind.....	1 00

Black Minorca pullet—

(1) T. B. Poe, Oakford, Ind.....	3 00
(2) T. B. Poe, Oakford, Ind.....	2 00
(3) T. B. Poe, Oakford, Ind.....	1 00

Black Minorca pen—

(1) T. B. Poe, Oakford, Ind.....	5 00
(2) T. B. Poe, Oakford, Ind.....	3 00
(3) Thos. M. Campbell, Darlington, Ind.....	2 00

White Minorca cock—

(1) Chas. McClave, New London, Ohio.....	1 00
(2) T. N. Smiley & Son, Milligan, Ind.....	50
(3) No award.	

White Minorca hen—

(1) C. D. Westmoreland, Hall, Ind.....	3 00
(2) Chas. McClave, New London, Ohio.....	2 00
(3) T. N. Smiley & Son, Milligan, Ind.....	1 00

White Minorca cockerel—

(1) C. N. Westmoreland, Hall, Ind.....	1 00
(2) Chas. McClave, New London, Ohio.....	50
(3) Chas. McClave, New London, Ohio.....	Ribbon

White Minorca pullet—

(1) C. D. Westmoreland, Hall, Ind.....	1 00
(2) C. D. Westmoreland, Hall, Ind.....	50
(3) T. N. Smiley & Son, Milligan, Ind.....	Ribbon

White Minorca pen—

(1) C. D. Westmoreland, Hall, Ind.....	3 00
(2) T. N. Smiley & Son, Milligan, Ind.....	2 00
(3) No award.	

Blue Andalusian cock—

(1) F. M. Meloy, Shelbyville, Ind.....	50
(2) No award.	
(3) No award.	

Blue Andalusian hen—

(1) F. M. Meloy, Shelbyville, Ind.....	3 00
(2) F. M. Meloy, Shelbyville, Ind.....	2 00
(3) F. M. Meloy, Shelbyville, Ind.....	1 00

Blue Andalusian cockerel—

(1) J. A. Hornung, Greensburg, Ind.....	1 00
(2) Chas. McClave, New London, Ohio.....	50
(3) J. A. Hornung, Greensburg, Ind.....	Ribbon

Blue Andalusian pullet—

(1) Chas. McClave, New London, Ohio.....	1 00
(2) J. A. Hornung, Greensburg, Ind.....	50
(3) J. A. Hornung, Greensburg, Ind.....	Ribbon

Blue Andalusian pen—

(1) J. A. Hornung, Greensburg, Ind.....	3 00
(2) F. M. Meloy, Shelbyville, Ind.....	2 00
(3) No award.	

Black Spanish cock—

- | | |
|--|--------|
| (1) J. A. Hornung, Greensburg, Ind..... | 1 00 |
| (2) J. S. Smiley & Son, Milligan, Ind..... | 50 |
| (3) F. M. Meloy, Shelbyville, Ind..... | Ribbon |

Black Spanish hen—

- | | |
|--|------|
| (1) J. S. Smiley & Son, Milligan, Ind..... | 3 00 |
| (2) J. A. Hornung, Greensburg, Ind..... | 2 00 |
| (3) J. S. Smiley & Son, Milligan, Ind..... | 1 00 |

Black Spanish cockerel—

- | | |
|--|--------|
| (1) J. A. Hornung, Greensburg, Ind..... | 1 00 |
| (2) J. A. Hornung, Greensburg, Ind..... | 50 |
| (3) Chas. McClave, New London, Ohio..... | Ribbon |

Black Spanish pullet—

- | | |
|--|--------|
| (1) J. A. Hornung, Greensburg, Ind..... | 1 00 |
| (2) J. A. Hornung, Greensburg, Ind..... | 50 |
| (3) Chas. McClave, New London, Ohio..... | Ribbon |

Black Spanish pen—

- | | |
|--|--------|
| (1) J. A. Hornung, Greensburg, Ind..... | 1 00 |
| (2) J. S. Smiley & Son, Milligan, Ind..... | Ribbon |
| (3) F. M. Meloy, Shelbyville, Ind..... | Ribbon |

POLISH.

White-crested black cock—

- | | |
|--|--------|
| (1) J. S. Smiley & Son, Milligan, Ind..... | 1 00 |
| (2) J. S. Smiley & Son, Milligan, Ind..... | 50 |
| (3) J. S. Smiley & Son, Milligan, Ind..... | Ribbon |

White-crested black hen—

- | | |
|--|------|
| (1) J. A. Hornung, Greensburg, Ind..... | 3 00 |
| (2) Chas. McClave, New London, Ohio..... | 2 00 |
| (3) J. A. Hornung, Greensburg, Ind..... | 1 00 |

White-crested black cockerel—

- | | |
|--|--------|
| (1) J. A. Hornung, Greensburg, Ind..... | 1 00 |
| (2) J. A. Hornung, Greensburg, Ind..... | 50 |
| (3) Chas. McClave, New London, Ohio..... | Ribbon |

White-crested black pullet—

- | | |
|---|------|
| (1) J. A. Hornung, Greensburg, Ind..... | 1 00 |
| (2) J. A. Hornung, Greensburg, Ind..... | 50 |
| (3) No award. | |

White-crested black pen—

- | | |
|--|--------|
| (1) J. A. Hornung, Greensburg, Ind..... | 1 00 |
| (2) Chas. McClave, New London, Ohio..... | Ribbon |
| (3) J. S. Smiley & Son, Milligan, Ind..... | Ribbon |

Silver-bearded cock—

- | | |
|--|--------|
| (1) F. M. Meloy, Shelbyville, Ind..... | Ribbon |
| (2) No award. | |
| (3) No award. | |

Silver-bearded hen—

- | | |
|--|--------|
| (1) F. M. Meloy, Shelbyville, Ind..... | 1 00 |
| (2) F. M. Meloy, Shelbyville, Ind..... | 50 |
| (3) F. M. Meloy, Shelbyville, Ind..... | Ribbon |

Silver-bearded cockerel—

- (1) No award.
- (2) No award.
- (3) No award.

Silver-bearded pullet—

- (1) No award.
- (2) No award.
- (3) No award.

Silver-bearded pen—

- | | |
|--|--------|
| (1) F. M. Meloy, Shelbyville, Ind..... | Ribbon |
| (2) No award. | |
| (3) No award. | |

HAMBURGS.

Silver-spangled cock—

- | | |
|--|------|
| (1) Matthew H. Phares, Shelbyville, Ind..... | 3 00 |
| (2) F. M. Meloy, Shelbyville, Ind..... | 2 00 |
| (3) J. A. Hornung, Greensburg, Ind..... | 1 00 |

Silver-spangled hen—

- | | |
|--|------|
| (1) Matthew H. Phares, Shelbyville, Ind..... | 3 00 |
| (2) Matthew H. Phares, Shelbyville, Ind..... | 2 00 |
| (3) J. A. Hornung, Greensburg, Ind..... | 1 00 |

Silver-spangled cockerel—

- | | |
|--|--------|
| (1) J. A. Hornung, Greensburg, Ind..... | 2 00 |
| (2) W. O. Thomas, Pittston, Pa..... | 1 00 |
| (3) Matthew H. Phares, Shelbyville, Ind..... | Ribbon |

Silver-spangled pullet—

- | | |
|--|------|
| (1) Matthew H. Phares, Shelbyville, Ind..... | 3 00 |
| (2) W. O. Thomas, Pittston, Pa..... | 2 00 |
| (3) Matthew H. Phares, Shelbyville, Ind..... | 1 00 |

Silver-spangled pen—

- | | |
|--|------|
| (1) Matthew H. Phares, Shelbyville, Ind..... | 5 00 |
| (2) Matthew H. Phares, Shelbyville, Ind..... | 3 00 |
| (3) W. O. Thomas, Pittston, Pa..... | 2 00 |

HOUDANS.

Houdan cock—

- | | |
|--|--------|
| (1) Chas. McClave, New London, Ohio..... | 1 00 |
| (2) F. M. Meloy, Shelbyville, Ind..... | 1 00 |
| (3) J. S. Smiley & Son, Milligan, Ind..... | Ribbon |

Houdan hen—

- (1) Chas. McClave, New London, Ohio..... 2 00
 (2) F. M. Meloy, Shelbyville, Ind..... 1 00
 (3) J. S. Smiley & Son, Milligan, Ind..... Ribbon

Houdan cockerel—

- (1) Chas. McClave, New London, Ohio..... 2 00
 (2) Wm. A. Stoltz, Indianapolis, Ind..... 1 00
 (3) T. B. Poe, Oakford, Ind..... Ribbon

Houdan pullet—

- (1) Chas. McClave, New London, Ohio..... 2 00
 (2) J. S. Smiley & Son, Milligan, Ind..... 1 00
 (3) Chas. McClave, New London, Ohio..... Ribbon

Houdan pen—

- (1) Chas. McClave, New London, Ohio..... 1 00
 (2) J. S. Smiley & Son, Milligan, Ind..... Ribbon
 (3) No award.

DORKINGS.

Silver gray cock—

- (1) Thos. M. Campbell, Darlington, Ind..... 1 00
 (2) Chas. McClave, New London, Ohio..... 50
 (3) Thos. M. Campbell, Darlington, Ind..... Ribbon

Silver gray hen—

- (1) Chas. McClave, New London, Ohio..... 2 00
 (2) Thos. M. Campbell, Darlington, Ind..... 1 00
 (3) Thos. M. Campbell, Darlington, Ind..... Ribbon

Silver gray cockerel—

- (1) Chas. McClave, New London, Ohio..... 1 00
 (2) Thos. M. Campbell, Darlington, Ind..... 50
 (3) Thos. M. Campbell, Darlington, Ind..... Ribbon

Silver gray pullet—

- (1) Chas. McClave, New London, Ohio..... 1 00
 (2) Thos. M. Campbell, Darlington, Ind..... 50
 (3) Thos. M. Campbell, Darlington, Ind..... Ribbon

Silver gray pen—

- (1) Thos. M. Campbell, Darlington, Ind..... 1 00
 (2) Thos. M. Campbell, Darlington, Ind..... Ribbon
 (3) No award.

Colored cock—

- (1) No award.
 (2) No award.
 (3) No award.

Colored hen—

- (1) No award.
 (2) No award.
 (3) No award.

Colored cockerel—

- (1) No award.
- (2) No award.
- (3) No award.

Colored pullet—

- (1) No award.
- (2) No award.
- (3) No award.

Colored pen—

- (1) No award.
- (2) No award.
- (3) No award.

ASIATIC.

Buff Cochin cock—

- | | |
|--|------|
| (1) Johnson & Potts, Greenfield, Ind. | 3 00 |
| (2) Johnson & Potts, Greenfield, Ind. | 2 00 |
| (3) Fred Rooker, Martinsville, Ind. | 1 00 |

Buff Cochin hen—

- | | |
|--|------|
| (1) Johnson & Potts, Greenfield, Ind. | 3 00 |
| (2) Johnson & Potts, Greenfield, Ind. | 2 00 |
| (3) Warbritton Bros., Ladoga, Ind. | 1 00 |

Buff Cochin cockerel—

- | | |
|--|------|
| (1) Warbritton Bros., Ladoga, Ind. | 3 00 |
| (2) Johnson & Potts, Greenfield, Ind. | 2 00 |
| (3) Fred Rooker, Martinsville, Ind. | 1 00 |

Buff Cochin pullet—

- | | |
|--|------|
| (1) Johnson & Potts, Greenfield, Ind. | 3 00 |
| (2) Johnson & Potts, Greenfield, Ind. | 2 00 |
| (3) Johnson & Potts, Greenfield, Ind. | 1 00 |

Buff Cochin pen—

- | | |
|--|------|
| (1) Johnson & Potts, Greenfield, Ind. | 5 00 |
| (2) Johnson & Potts, Greenfield, Ind. | 3 00 |
| (3) Johnson & Potts, Greenfield, Ind. | 2 00 |

Partridge Cochin cock—

- | | |
|---|--------|
| (1) Chas. McClave, New London, Ohio. | 2 00 |
| (2) Warbritton Bros., Ladoga, Ind. | 1 00 |
| (3) J. S. Smiley & Son, Milligan, Ind. | Ribbon |

Partridge Cochin hen—

- | | |
|--|------|
| (1) Warbritton Bros., Ladoga, Ind. | 3 00 |
| (2) Chas. McClave, New London, Ohio. | 2 00 |
| (3) Mrs. R. W. Williams, Indianapolis, Ind. | 1 00 |

Partridge Cochin cockerel—

- | | |
|--|--------|
| (1) Johnson & Potts, Greenfield, Ind. | 2 00 |
| (2) Warbritton Bros., Ladoga, Ind. | 1 00 |
| (3) Chas. McClave, New London, Ohio. | Ribbon |

Partridge Cochinchina pullet—

(1) Warbritton Bros., Ladoga, Ind.....	3 00
(2) Warbritton Bros., Ladoga, Ind.....	2 00
(2) Johnson & Potts, Greenfield, Ind.....	1 00

Partridge Cochinchina pen—

(1) Warbritton Bros., Ladoga, Ind.....	5 00
(2) J. S. Smiley & Son, Milligan, Ind.....	3 00
(3) T. B. Poe, Oakford, Ind.....	2 00

White Cochinchina cock—

(1) T. B. Poe, Oakford, Ind.....	1 00
(2) W. O. Swain, Arlington, Ind.....	50
(3) T. B. Poe, Oakford, Ind.....	Ribbon

White Cochinchina hen—

(1) W. O. Swain, Arlington, Ind.....	3 00
(2) Warbritton Bros., Ladoga, Ind.....	2 00
(3) W. O. Swain, Arlington, Ind.....	1 00

White Cochinchina cockerel—

(1) W. O. Swain, Arlington, Ind.....	1 00
(2) W. O. Swain, Arlington, Ind.....	50
(3) Warbritton Bros., Ladoga, Ind.....	Ribbon

White Cochinchina pullet—

(1) W. O. Swain, Arlington, Ind.....	1 00
(2) Warbritton Bros., Ladoga, Ind.....	50
(3) Warbritton Bros., Ladoga, Ind.....	Ribbon

White Cochinchina pen—

(1) W. O. Swain, Arlington, Ind.....	2 00
(2) T. B. Poe, Oakford, Ind.....	2 00
(3) Warbritton Bros., Ladoga, Ind.....	Ribbon

Black Cochinchina cock—

(1) Warbritton Bros., Ladoga, Ind.....	2 00
(2) Mrs. R. W. Williams, Indianapolis, Ind.....	1 00
(3) L. H. Seidensticker, Brightwood, Ind.....	Ribbon

Black Cochinchina hen—

(1) Will J. Blackman, St. Louis, Mo.....	3 00
(2) L. H. Seidensticker, Brightwood, Ind.....	2 00
(3) L. H. Seidensticker, Brightwood, Ind.....	1 00

Black Cochinchina cockerel—

(1) Mrs. R. W. Williams, Indianapolis, Ind.....	50
(2) No award.	
(3) No award.	

Black Cochinchina pullet—

(1) Warbritton Bros., Ladoga, Ind.....	1 00
(2) Mrs. R. W. Williams, Indianapolis, Ind.....	50
(3) Mrs. R. W. Williams, Indianapolis, Ind.....	Ribbon

Black Cochin pen—

- | | |
|---|--------|
| (1) Warbritton Bros., Ladoga, Ind..... | 3 00 |
| (2) Mrs. R. W. Williams, Indianapolis, Ind..... | 2 00 |
| (3) L. H. Seidensticker, Brightwood, Ind..... | Ribbon |

Black Langshan cock—

- | | |
|---|------|
| (1) J. A. Hornung, Greensburg, Ind..... | 3 00 |
| (2) Lindley & Butler, Russiaville, Ind..... | 2 00 |
| (3) G. W. Wilkins, Atlanta, Ind..... | 1 00 |

Black Langshan hen—

- | | |
|--|------|
| (1) Benj. H. McCracken, Martinsville, Ind..... | 3 00 |
| (2) G. W. Wilkins, Atlanta, Ind..... | 2 00 |
| (3) McCoy Bros., Vincennes, Ind..... | 1 00 |

Black Langshan cockerel—

- | | |
|---|------|
| (1) Johnson & Potts, Greenfield, Ind..... | 3 00 |
| (2) Johnson & Potts, Greenfield, Ind..... | 2 00 |
| (3) McCoy Bros., Vincennes, Ind..... | 1 00 |

Black Langshan pullet—

- | | |
|---|------|
| (1) Lindley & Butler, Russiaville, Ind..... | 3 00 |
| (2) Lindley & Butler, Russiaville, Ind..... | 2 00 |
| (3) Johnson & Potts, Greenfield, Ind..... | 1 00 |

Black Langshan pen—

- | | |
|---|------|
| (1) Lindley & Butler, Russiaville, Ind..... | 5 00 |
| (2) Johnson & Potts, Greenfield, Ind..... | 3 00 |
| (3) J. A. Hornung, Greensburg, Ind..... | 2 00 |

White Langshan cock—

- | | |
|---|------|
| (1) Thos. M. Campbell, Darlington, Ind..... | 3 00 |
| (2) T. N. Smiley & Son, Milligan, Ind..... | 2 00 |
| (3) Stephen Trehar, Elwood, Ind..... | 1 00 |

White Langshan hen—

- | | |
|--|------|
| (1) T. N. Smiley & Son, Milligan, Ind..... | 3 00 |
| (2) C. D. Westmoreland, Hall, Ind..... | 2 00 |
| (3) Stephen Trehar, Elwood, Ind..... | 1 00 |

White Langshan cockerel—

- | | |
|--|--------|
| (1) T. N. Smiley & Son, Milligan, Ind..... | 2 00 |
| (2) C. D. Westmoreland, Hall, Ind..... | 1 00 |
| (3) T. N. Smiley & Son, Milligan, Ind..... | Ribbon |

White Langshan pullet—

- | | |
|--|------|
| (1) Benj. H. McCracken, Martinsville, Ind..... | 3 00 |
| (2) C. D. Westmoreland, Hall, Ind..... | 2 00 |
| (3) C. D. Westmoreland, Hall, Ind..... | 1 00 |

White Langshan pen—

- | | |
|--|------|
| (1) T. N. Smiley & Son, Milligan, Ind..... | 5 00 |
| (2) C. D. Westmoreland, Hall, Ind..... | 3 00 |
| (3) T. N. Smiley & Son, Milligan, Ind..... | 2 00 |

MEDITERRANEAN.

Single-comb Brown Leghorn cock—	
(1) J. S. Smiley & Son, Milligan, Ind.....	3 00
(2) J. S. Smiley & Son, Milligan, Ind.....	2 00
(3) Charles McClave, New London, Ohio.....	1 00
Single-comb Brown Leghorn hen—	
(1) W. O. Swain, Arlington, Ind.....	3 00
(2) J. S. Smiley & Son, Milligan, Ind.....	2 00
(3) Charles McClave, New London, Ohio.....	1 00
Single-comb Brown Leghorn cockerel—	
(1) S. L. Tuttle, Naugatuck, Conn.....	3 00
(2) Charles McClave, New London, Ohio.....	2 00
(3) J. S. Smiley & Son, Milligan, Ind.....	1 00
Single-comb Brown Leghorn pullet—	
(1) C. D. Westmoreland, Hall, Ind.....	3 00
(2) Charles McClave, New London, Ohio.....	2 00
(3) C. D. Westmoreland, Hall, Ind.....	1 00
Single-comb Brown Leghorn pen—	
(1) J. S. Smiley & Son, Milligan, Ind.....	5 00
(2) Charles McClave, New London, Ohio.....	3 00
(3) S. L. Tuttle, Naugatuck, Conn.....	2 00
Rose-comb Brown Leghorn cock—	
(1) Charles McClave, New London, Ohio.....	2 00
(2) Charles McClave, New London, Ohio.....	1 00
(3) T. N. Smiley & Son, Milligan, Ind.....	Ribbon
Rose-comb Brown Leghorn hen—	
(1) W. O. Swain, Arlington, Ind.....	3 00
(2) J. A. Hornung, Greensburg, Ind.....	2 00
(3) T. N. Smiley & Son, Milligan, Ind.....	1 00
Rose-comb Brown Leghorn cockerel—	
(1) Charles McClave, New London, Ohio.....	2 00
(2) W. O. Swain, Arlington, Ind.....	1 00
(3) T. N. Smiley & Son, Milligan, Ind.....	Ribbon
Rose-comb Brown Leghorn pullet—	
(1) W. O. Swain, Arlington, Ind.....	3 00
(2) Charles McClave, New London, Ohio.....	2 00
(3) Charles McClave, New London, Ohio.....	1 00
Rose-comb Brown Leghorn pen—	
(1) W. O. Swain, Arlington, Ind.....	5 00
(2) Charles McClave, New London, Ohio.....	3 00
(3) T. N. Smiley & Son, Milligan, Ind.....	2 00
Single-comb White Leghorn cock—	
(1) B. F. Hill, Indianapolis, Ind.....	3 00
(2) William Tobin, Indianapolis, Ind.....	2 00
(3) William Tobin, Indianapolis, Ind.....	1 00

Single-comb White Leghorn hen—	
(1) William Tobin, Indianapolis, Ind.....	3 00
(2) Charles McClave, New London, Ohio.....	2 00
(3) William Tobin, Indianapolis, Ind.....	1 00
Single-comb White Leghorn cockerel—	
(1) William Tobin, Indianapolis, Ind.....	3 00
(2) B. F. Hill, Indianapolis, Ind.....	2 00
(3) Mascotte Poultry Yards, Morgan Park, Ill.....	1 00
Single-comb White Leghorn pullet—	
(1) B. F. Hill, Indianapolis, Ind.....	3 00
(2) Mascotte Poultry Yards, Morgan Park, Ill.....	2 00
(3) F. M. Meloy, Shelbyville, Ind.....	1 00
Single-comb White Leghorn pen—	
(1) William Tobin, Indianapolis, Ind.....	5 00
(2) B. F. Hill, Indianapolis, Ind.....	3 00
(3) Mascotte Poultry Yards, Morgan Park, Ill.....	2 00
Rose-comb White Leghorn cock—	
(1) Charles McClave, New London, Ohio.....	3 00
(2) J. A. Hornung, Greensburg, Ind.....	2 00
(3) T. N. Smiley & Son, Milligan, Ind.....	1 00
Rose-comb White Leghorn hen—	
(1) T. N. Smiley & Son, Milligan, Ind.....	3 00
(2) T. N. Smiley & Son, Milligan, Ind.....	2 00
(3) W. O. Swain, Arlington, Ind.....	1 00
Rose-comb White Leghorn cockerel—	
(1) Oak Hill Poultry Yards, Indianapolis, Ind.....	2 00
(2) W. O. Swain, Arlington, Ind.....	1 00
(3) F. M. Meloy, Shelbyville, Ind.....	Ribbon
Rose-comb White Leghorn pullet—	
(1) T. N. Smiley & Son, Milligan, Ind.....	3 00
(2) Charles McClave, New London, Ohio.....	2 00
(3) M. H. Phares, Shelbyville, Ind.....	1 00
Rose-comb White Leghorn pen—	
(1) T. N. Smiley & Son, Milligan, Ind.....	5 00
(2) Charles McClave, New London, Ohio.....	3 00
(3) W. O. Swain, Arlington, Ind.....	2 00
Single-comb Buff Leghorn cock—	
(1) J. A. Hornung, Greensburg, Ind.....	2 00
(2) F. M. Meloy, Shelbyville, Ind.....	1 00
(3) Elbert Bros., Alexandria, Ind.....	Ribbon
Single-comb Buff Leghorn hen—	
(1) Elbert Bros., Alexandria, Ind.....	3 00
(2) Warbritton Bros., Ladoga, Ind.....	2 00
(3) J. A. Hornung, Greensburg, Ind.....	1 00

Single-comb Buff Leghorn cockerel—

(1) J. A. Hornung, Greensburg, Ind.....	1 00
(2) Elbert Bros., Alexandria, Ind.....	50
(3) Elbert Bros., Alexandria, Ind.....	Ribbon

Single-comb Buff Leghorn pullet—

(1) Elbert Bros., Alexandria, Ind.....	2 00
(2) J. A. Hornung, Greensburg, Ind.....	1 00
(3) Elbert Bros., Alexandria, Ind.....	Ribbon

Single-comb Buff Leghorn pen—

(1) Elbert Bros., Alexandria, Ind.....	5 00
(2) Elbert Bros., Alexandria, Ind.....	3 00
(3) Warbritton Bros., Ladoga, Ind.....	2 00

AMERICAN.

Barred Plymouth Rock cock—

(1) Oak Hill Poultry Yards, Indianapolis, Ind.....	3 00
(2) James P. Carter, Shelbyville, Ind.....	2 00
(3) J. A. Hornung, Greensburg, Ind.....	1 00

Barred Plymouth Rock hen—

(1) Charles McClave, New London, Ohio.....	3 00
(2) J. A. Hornung, Greensburg, Ind.....	2 00
(3) Ed B. Murphy, Carmel, Ind.....	1 00

Barred Plymouth Rock cockerel—

(1) J. A. Hornung, Greensburg, Ind.....	3 00
(2) George W. Ropp, Franklin, Ind.....	2 00
(3) W. W. Zike, Morristown, Ind.....	1 00

Barred Plymouth Rock pullet—

(1) James P. Carter, Shelbyville, Ind.....	3 00
(2) James P. Carter, Shelbyville, Ind.....	2 00
(3) J. A. Hornung, Greensburg, Ind.....	1 00

Barred Plymouth Rock pen—

(1) James P. Carter, Shelbyville, Ind.....	5 00
(2) J. A. Hornung, Greensburg, Ind.....	3 00
(3) George W. Ropp, Franklin, Ind.....	2 00

White Plymouth Rock cock—

(1) J. T. Thompson, Hope, Ind.....	3 00
(2) J. S. Smiley & Son, Milligan, Ind.....	2 00
(3) J. R. Mathis, Franklin, Ind.....	1 00

White Plymouth Rock hen—

(1) J. R. Mathis, Franklin, Ind.....	3 00
(2) J. T. Thompson, Hope, Ind.....	2 00
(3) D. T. Roots, Connersville, Ind.....	1 00

White Plymouth Rock cockerel—

(1) D. T. Roots, Connersville, Ind.....	3 00
(2) J. R. Mathis, Franklin, Ind.....	2 00
(3) D. T. Roots, Connersville, Ind.....	1 00

White Plymouth Rock pullet—

(1) D. T. Roots, Connersville, Ind.....	3 00
(2) J. R. Mathis, Franklin, Ind.....	2 00
(3) J. R. Mathis, Franklin, Ind.....	1 00

White Plymouth Rock pen—

(1) D. T. Roots, Connersville, Ind.....	5 00
(2) J. R. Mathis, Franklin, Ind.....	3 00
(3) J. T. Thompson, Hope, Ind.....	2 00

Buff Plymouth Rock cock—

(1) C. A. Paetzel & Son, Hope, Ind.....	2 00
(2) C. A. Paetzel & Son, Hope, Ind.....	1 00
(3) C. A. Paetzel & Son, Hope, Ind.....	Ribbon

Buff Plymouth Rock hen—

(1) C. A. Paetzel & Son, Hope, Ind.....	3 00
(2) Johnson & Potts, Greenfield, Ind.....	2 00
(3) C. A. Paetzel & Son, Hope, Ind.....	1 00

Buff Plymouth Rock cockerel—

(1) R. L. Bratton, New Ross, Ind.....	3 00
(2) William A. Stolts, Indianapolis, Ind.....	2 00
(3) Charles McClave, New London, Ohio.....	1 00

Buff Plymouth Rock pullet—

(1) C. A. Paetzel & Son, Hope, Ind.....	3 00
(2) C. A. Paetzel & Son, Hope, Ind.....	2 00
(3) Charles McClave, New London, Ohio.....	1 00

Buff Plymouth Rock pen—

(1) C. A. Paetzel & Son, Hope, Ind.....	5 00
(2) C. A. Paetzel & Son, Hope, Ind.....	3 00
(3) R. L. Bratton, New Ross, Ind.....	2 00

Silver Wyandotte cock—

(1) F. M. Meloy, Shelbyville, Ind.....	2 00
(2) T. N. Smiley & Son, Milligan, Ind.....	1 00
(3) Thomas M. Campbell, Darlington, Ind.....	Ribbon

Silver Wyandotte hen—

(1) F. M. Meloy, Shelbyville, Ind.....	3 00
(2) T. N. Smiley & Son, Milligan, Ind.....	2 00
(3) T. N. Smiley & Son, Milligan, Ind.....	1 00

Silver Wyandotte cockerel—

(1) J. A. Hornung, Greensburg, Ind.....	2 00
(2) F. M. Meloy, Shelbyville, Ind.....	1 00
(3) J. A. Hornung, Greensburg, Ind.....	Ribbon

Silver Wyandotte pullet—

(1) F. M. Meloy, Shelbyville, Ind.....	3 00
(2) J. A. Hornung, Greensburg, Ind.....	2 00
(3) J. A. Hornung, Greensburg, Ind.....	1 00

Silver Wyandotte pen—

(1) F. M. Meloy, Shelbyville, Ind.....	5 00
(2) J. A. Hornung, Greensburg, Ind.....	3 00
(3) T. N. Smiley & Son, Milligan, Ind.....	2 00

Golden Wyandotte cock—

(1) F. M. Meloy, Shelbyville, Ind.....	2 00
(2) Charles McClave, New London, Ohio.....	1 00
(3) J. A. Hornung, Greensburg, Ind.....	Ribbon

Golden Wyandotte hen—

(1) J. A. Hornung, Greensburg, Ind.....	3 00
(2) J. A. Hornung, Greensburg, Ind.....	2 00
(3) Charles McClave, New London, Ohio.....	1 00

Golden Wyandotte cockerel—

(1) Charles McClave, New London, Ohio.....	1 00
(2) Charles McClave, New London, Ohio.....	50
(3) Johnson & Potts, Greenfield, Ind.....	Ribbon

Golden Wyandotte pullet—

(1) Charles McClave, New London, Ohio.....	3 00
(2) J. A. Hornung, Greensburg, Ind.....	2 00
(3) Charles McClave, New London, Ohio.....	1 00

Golden Wyandotte pen—

(1) Charles McClave, New London, Ohio.....	5 00
(2) J. A. Hornung, Greensburg, Ind.....	3 00
(3) F. M. Meloy, Shelbyville, Ind.....	2 00

White Wyandotte cock—

(1) Charles McClave, New London, Ohio.....	2 00
(2) H. D. Kendrick, Irvington, Ind.....	1 00
(3) Charles McClave, New London, Ohio.....	Ribbon

White Wyandotte hen—

(1) H. D. Kendrick, Irvington, Ind.....	3 00
(2) Charles McClave, New London, Ohio.....	2 00
(3) H. D. Kendrick, Irvington, Ind.....	1 00

White Wyandotte cockerel—

(1) Charles McClave, New London, Ohio.....	2 00
(2) Charles McClave, New London, Ohio.....	1 00
(3) John A. Rogers, Wilmette, Ill.....	Ribbon

White Wyandotte pullet—

(1) Charles McClave, New London, Ohio.....	3 00
(2) Charles McClave, New London, Ohio.....	2 00
(3) Charles McClave, New London, Ohio.....	1 00

White Wyandotte pen—

(1) Charles McClave, New London, Ohio.....	5 00
(2) Charles McClave, New London, Ohio.....	3 00
(3) John A. Rogers, Wilmette, Ill.....	2 00

Buff Wyandotte cock—

- | | |
|---|--------|
| (1) J. A. Hornung, Greensburg, Ind..... | 1 00 |
| (2) S. B. Lane, Spiceland, Ind..... | 50 |
| (3) Elbert Bros., Alexandria, Ind..... | Ribbon |

Buff Wyandotte hen—

- | | |
|-------------------------------------|--------|
| (1) S. B. Lane, Spiceland, Ind..... | 2 00 |
| (2) S. B. Lane, Spiceland, Ind..... | 1 00 |
| (3) S. B. Lane, Spiceland, Ind..... | Ribbon |

Buff Wyandotte cockerel—

- | | |
|-------------------------------------|--------|
| (1) S. B. Lane, Spiceland, Ind..... | 1 00 |
| (2) S. B. Lane, Spiceland, Ind..... | 50 |
| (3) S. B. Lane, Spiceland, Ind..... | Ribbon |

Buff Wyandotte pullet—

- | | |
|-------------------------------------|--------|
| (1) S. B. Lane, Spiceland, Ind..... | 2 00 |
| (2) S. B. Lane, Spiceland, Ind..... | 1 00 |
| (3) S. B. Lane, Spiceland, Ind..... | Ribbon |

Buff Wyandotte pen—

- | | |
|-------------------------------------|--------|
| (1) S. B. Lane, Spiceland, Ind..... | 1 00 |
| (2) S. B. Lane, Spiceland, Ind..... | Ribbon |
| (3) No award. | |

Silver Penciled Wyandotte cock—

- | | |
|--|--------|
| (1) Carver & Avey, Columbia City, Ind..... | 1 00 |
| (2) Carver & Avey, Columbia City, Ind..... | 50 |
| (3) Carver & Avey, Columbia City, Ind..... | Ribbon |

Silver Penciled Wyandotte hen—

- | | |
|--|--------|
| (1) Carver & Avey, Columbia City, Ind..... | 2 00 |
| (2) Carver & Avey, Columbia City, Ind..... | 1 00 |
| (3) Carver & Avey, Columbia City, Ind..... | Ribbon |

Silver Penciled Wyandotte cockerel—

- | | |
|--|--------|
| (1) Carver & Avey, Columbia City, Ind..... | 1 00 |
| (2) Carver & Avey, Columbia City, Ind..... | 50 |
| (3) Carver & Avey, Columbia City, Ind..... | Ribbon |

Silver Penciled Wyandotte pullet—

- | | |
|--|--------|
| (1) Carver & Avey, Columbia City, Ind..... | 2 00 |
| (2) Carver & Avey, Columbia City, Ind..... | 1 00 |
| (3) Carver & Avey, Columbia City, Ind..... | Ribbon |

Silver Penciled Wyandotte pen—

- | | |
|--|------|
| (1) Carver & Avey, Columbia City, Ind..... | 1 00 |
| (2) No award. | |
| (3) No award. | |

Partridge Wyandotte cock—

- | | |
|--|--------|
| (1) Charles McClave, New London, Ohio..... | 2 00 |
| (2) Carver & Avey, Columbia City, Ind..... | 1 00 |
| (3) Carver & Avey, Columbia City, Ind..... | Ribbon |

Partridge Wyandotte hen—

- | | |
|--|--------|
| (1) J. A. Hornung, Greensburg, Ind..... | 2 00 |
| (2) Carver & Avey, Columbia City, Ind..... | 1 00 |
| (3) Charles McClave, New London, Ohio..... | Ribbon |

Partridge Wyandotte cockerel—

- | | |
|--|--------|
| (1) Carver & Avey, Columbia City, Ind..... | 2 00 |
| (2) Carver & Avey, Columbia City, Ind..... | 1 00 |
| (3) J. A. Hornung, Greensburg, Ind..... | Ribbon |

Partridge Wyandotte pullet—

- | | |
|--|--------|
| (1) Carver & Avey, Columbia City, Ind..... | 2 00 |
| (2) Carver & Avey, Columbia City, Ind..... | 1 00 |
| (3) Carver & Avey, Columbia City, Ind..... | Ribbon |

Partridge Wyandotte pen—

- | | |
|--|------|
| (1) Carver & Avey, Columbia City, Ind..... | 1 00 |
| (2) No award. | |
| (3) No award. | |

Buff Orpington cock—

- | | |
|--|--------|
| (1) F. M. Meloy, Shelbyville, Ind..... | 1 00 |
| (2) Charles McClave, New London, Ohio..... | 50 |
| (3) Thomas M. Campbell, Darlington, Ind..... | Ribbon |

Buff Orpington hen—

- | | |
|--|--------|
| (1) Charles McClave, New London, Ohio..... | 2 00 |
| (2) Thomas M. Campbell, Darlington, Ind..... | 1 00 |
| (3) Charles McClave, New London, Ohio..... | Ribbon |

Buff Orpington cockerel—

- | | |
|--|--------|
| (1) Thomas M. Campbell, Darlington, Ind..... | 1 00 |
| (2) Charles McClave, New London, Ohio..... | 50 |
| (3) Charles McClave, New London, Ohio..... | Ribbon |

Buff Orpington pullet—

- | | |
|--|--------|
| (1) Charles McClave, New London, Ohio..... | 2 00 |
| (2) Thomas M. Campbell, Darlington, Ind..... | 1 00 |
| (3) Thomas M. Campbell, Darlington, Ind..... | Ribbon |

Buff Orpington pen—

- | | |
|--|--------|
| (1) Charles McClave, New London, Ohio..... | 3 00 |
| (2) Thomas M. Campbell, Darlington, Ind..... | 2 00 |
| (3) F. M. Meloy, Shelbyville, Ind..... | Ribbon |

White Orpington cock—

- | | |
|---------------|--|
| (1) No award. | |
| (2) No award. | |
| (3) No award. | |

White Orpington hen—

- | | |
|---------------|--|
| (1) No award. | |
| (2) No award. | |
| (3) No award. | |

White Orpington cockerel—

- (1) No award.
- (2) No award.
- (3) No award.

White Orpington pullet—

- (1) No award.
- (2) No award.
- (3) No award.

White Orpington pen—

- (1) No award.
- (2) No award.
- (3) No award.

Rhode Island Red cock—

- | | |
|--|--------|
| (1) Mac E. Butler, Indianapolis, Ind. | 1 00 |
| (2) Mascotte Poultry Yards, Morgan Park, Ill. | 50 |
| (3) Leiber & Tobin, Indianapolis, Ind. | Ribbon |

Rhode Island Red hen—

- | | |
|---|--------|
| (1) Leiber & Tobin, Indianapolis, Ind. | 2 00 |
| (2) Leiber & Tobin, Indianapolis, Ind. | 1 00 |
| (3) Mac E. Butler, Indianapolis, Ind. | Ribbon |

Rhode Island Red cockerel—

- | | |
|---|------|
| (1) Mac E. Butler, Indianapolis, Ind. | 3 00 |
| (2) Mac E. Butler, Indianapolis, Ind. | 2 00 |
| (3) Leiber & Tobin, Indianapolis, Ind. | 1 00 |

Rhode Island Red pullet—

- | | |
|---|------|
| (1) Leiber & Tobin, Indianapolis, Ind. | 3 00 |
| (2) Leiber & Tobin, Indianapolis, Ind. | 2 00 |
| (3) Mac E. Butler, Indianapolis, Ind. | 1 00 |

Rhode Island Red pen—

- | | |
|---|------|
| (1) Leiber & Tobin, Indianapolis, Ind. | 5 00 |
| (2) Mac E. Butler, Indianapolis, Ind. | 3 00 |
| (3) Mac E. Butler, Indianapolis, Ind. | 2 00 |

ASIATIC.

Light Brahma cock—

- | | |
|---|--------|
| (1) Frank P. Johnson, Indianapolis, Ind. | 2 00 |
| (2) Frank P. Johnson, Indianapolis, Ind. | 1 00 |
| (3) C. D. Westmoreland, Hall, Ind. | Ribbon |

Light Brahma hen—

- | | |
|---|------|
| (1) Frank P. Johnson, Indianapolis, Ind. | 3 00 |
| (2) Frank P. Johnson, Indianapolis, Ind. | 2 00 |
| (3) J. S. Smiley & Son, Milligan, Ind. | 1 00 |

Light Brahma cockerel—

- | | |
|---|------|
| (1) Frank P. Johnson, Indianapolis, Ind. | 3 00 |
| (2) Frank P. Johnson, Indianapolis, Ind. | 2 00 |
| (3) Frank P. Johnson, Indianapolis, Ind. | 1 00 |

Light Brahma pullet—

- | | |
|--|------|
| (1) Frank P. Johnson, Indianapolis, Ind..... | 3 00 |
| (2) Frank P. Johnson, Indianapolis, Ind..... | 2 00 |
| (3) Frank P. Johnson, Indianapolis, Ind..... | 1 00 |

Light Brahma pen—

- | | |
|--|------|
| (1) Frank P. Johnson, Indianapolis, Ind..... | 5 00 |
| (2) Frank P. Johnson, Indianapolis, Ind..... | 3 00 |
| (3) Frank P. Johnson, Indianapolis, Ind..... | 2 00 |

Dark Brahma cock—

- | | |
|---|--------|
| (1) Warbritton Bros., Ladoga, Ind..... | 2 00 |
| (2) Warbritton Bros., Ladoga, Ind..... | 1 00 |
| (3) Mrs. R. W. Williams, Indianapolis, Ind..... | Ribbon |

Dark Brahma hen—

- | | |
|--|------|
| (1) J. A. Hornung, Greensburg, Ind..... | 3 00 |
| (2) Warbritton Bros., Ladoga, Ind..... | 2 00 |
| (3) T. N. Smiley & Son, Milligan, Ind..... | 1 00 |

Dark Brahma cockerel—

- | | |
|---|--------|
| (1) J. A. Hornung, Greensburg, Ind..... | 2 00 |
| (2) Mrs. R. W. Williams, Indianapolis, Ind..... | 1 00 |
| (3) Mrs. R. W. Williams, Indianapolis, Ind..... | Ribbon |

Dark Brahma pullet—

- | | |
|---|--------|
| (1) J. A. Hornung, Greensburg, Ind..... | 2 00 |
| (2) J. A. Hornung, Greensburg, Ind..... | 1 00 |
| (3) T. B. Poe, Oakford, Ind..... | Ribbon |

Dark Brahma pen—

- | | |
|---|--------|
| (1) J. A. Hornung, Greensburg, Ind..... | 3 00 |
| (2) Warbritton Bros., Ladoga, Ind..... | 2 00 |
| (3) Mrs. R. W. Williams, Indianapolis, Ind..... | Ribbon |

GAMES.

Black-breasted Red cock—

- | | |
|---|------|
| (1) Wesley Lanius, Greensburg, Ind..... | 1 00 |
| (2) Wesley Lanius, Greensburg, Ind..... | 50 |
| (3) No award. | |

Black-breasted Red hen—

- | | |
|---|------|
| (1) Wesley Lanius, Greensburg, Ind..... | 2 00 |
| (2) Wesley Lanius, Greensburg, Ind..... | 1 00 |
| (3) No award. | |

Black-breasted Red cockerel—

- | | |
|--|--------|
| (1) Wesley Lanius, Greensburg, Ind..... | 1 00 |
| (2) Wesley Lanius, Greensburg, Ind..... | 50 |
| (3) Thomas M. Campbell, Darlington, Ind..... | Ribbon |

Black-breasted Red pullet—

- | | |
|---|------|
| (1) Wesley Lanius, Greensburg, Ind..... | 2 00 |
| (2) Wesley Lanius, Greensburg, Ind..... | 1 00 |
| (3) No award. | |

Black-breasted Red pen—

- | | |
|---|------|
| (1) Wesley Lanius, Greensburg, Ind..... | 1 00 |
| (2) No award. | |
| (3) No award. | |

Pit Game cock—

- | | |
|---|--------|
| (1) Wesley Lanius, Greensburg, Ind..... | 1 00 |
| (2) C. D. Westmoreland, Hall, Ind..... | 50 |
| (3) Wesley Lanius, Greensburg, Ind..... | Ribbon |

Pit Game hen—

- | | |
|---|--------|
| (1) Wesley Lanius, Greensburg, Ind..... | 2 00 |
| (2) Mrs. R. W. Williams, Indianapolis, Ind..... | 1 00 |
| (3) C. D. Westmoreland, Hall, Ind..... | Ribbon |

Pit Game cockerel—

- | | |
|---|--------|
| (1) Wesley Lanius, Greensburg, Ind..... | 2 00 |
| (2) Wesley Lanius, Greensburg, Ind..... | 1 00 |
| (3) C. D. Westmoreland, Hall, Ind..... | Ribbon |

Pit Game pullet—

- | | |
|---|------|
| (1) Wesley Lanius, Greensburg, Ind..... | 3 00 |
| (2) Wesley Lanius, Greensburg, Ind..... | 2 00 |
| (3) C. D. Westmoreland, Hall, Ind..... | 1 00 |

Pit Game pen—

- | | |
|---|--------|
| (1) Wesley Lanius, Greensburg, Ind..... | 3 00 |
| (2) C. D. Westmoreland, Hall, Ind..... | 2 00 |
| (3) Mrs. R. W. Williams, Indianapolis, Ind..... | Ribbon |

Cornish Indian cock—

- | | |
|---|--------|
| (1) Elbert Bros., Alexandria, Ind..... | 2 00 |
| (2) C. D. Westmoreland, Hall, Ind..... | 1 00 |
| (3) Johnson & Potts, Greenfield, Ind..... | Ribbon |

Cornish Indian hen—

- | | |
|---|------|
| (1) Wesley Lanius, Greensburg, Ind..... | 3 00 |
| (2) C. D. Westmoreland, Hall, Ind..... | 2 00 |
| (3) No award. | |

Cornish Indian cockerel—

- | | |
|---|--------|
| (1) Wesley Lanius, Greensburg, Ind..... | 1 00 |
| (2) Johnson & Potts, Greenfield, Ind..... | 50 |
| (3) Wesley Lanius, Greensburg, Ind..... | Ribbon |

Cornish Indian pullet—

- | | |
|---|--------|
| (1) Johnson & Potts, Greenfield, Ind..... | 1 00 |
| (2) Wesley Lanius, Greensburg, Ind..... | 50 |
| (3) Wesley Lanius, Greensburg, Ind..... | Ribbon |

Cornish Indian pen—

- | | |
|---|------|
| (1) Wesley Lanius, Greensburg, Ind..... | 3 00 |
| (2) C. D. Westmoreland, Hall, Ind..... | 2 00 |
| (3) No award. | |

GAME BANTAMS.

Black-breasted Red cock—

- | | |
|--|--------|
| (1) Wesley Lanius, Greensburg, Ind..... | 1 00 |
| (2) Thomas M. Campbell, Darlington, Ind..... | 50 |
| (3) W. J. Merriott, Marion, Ind..... | Ribbon |

Black-breasted Red hen—

- | | |
|--|--------|
| (1) Wesley Lanius, Greensburg, Ind..... | 2 00 |
| (2) Thomas M. Campbell, Darlington, Ind..... | 1 00 |
| (3) W. J. Merriott, Marion, Ind..... | Ribbon |

Black-breasted Red cockerel—

- | | |
|--|--------|
| (1) Elbert Bros., Alexandria, Ind..... | 1 00 |
| (2) Wesley Lanius, Greensburg, Ind..... | 50 |
| (3) Thomas M. Campbell, Darlington, Ind..... | Ribbon |

Black-breasted Red pullet—

- | | |
|--|--------|
| (1) Thomas M. Campbell, Darlington, Ind..... | 2 00 |
| (2) Thomas M. Campbell, Darlington, Ind..... | 1 00 |
| (3) Wesley Lanius, Greensburg, Ind..... | Ribbon |

Black-breasted Red pen—

- | | |
|--|--------|
| (1) Thomas M. Campbell, Darlington, Ind..... | 1 00 |
| (2) Wesley Lanius, Greensburg, Ind..... | Ribbon |
| (3) No award. | |

Silver Duckwing cock—

- | | |
|--|--------|
| (1) J. A. Hornung, Greensburg, Ind..... | 1 00 |
| (2) Matthew H. Phares, Shelbyville, Ind..... | 50 |
| (3) Matthew H. Phares, Shelbyville, Ind..... | Ribbon |

Silver Duckwing hen—

- | | |
|--|--------|
| (1) J. A. Hornung, Greensburg, Ind..... | 1 00 |
| (2) Matthew H. Phares, Shelbyville, Ind..... | 50 |
| (3) Matthew H. Phares, Shelbyville, Ind..... | Ribbon |

Silver Duckwing cockerel—

- | | |
|--|--------|
| (1) J. A. Hornung, Greensburg, Ind..... | 2 00 |
| (2) Matthew H. Phares, Shelbyville, Ind..... | 1 00 |
| (3) Matthew H. Phares, Shelbyville, Ind..... | Ribbon |

Silver Duckwing pullet—

- | | |
|--|------|
| (1) J. A. Hornung, Greensburg, Ind..... | 2 00 |
| (2) Matthew H. Phares, Shelbyville, Ind..... | 1 00 |
| (3) No award. | |

Silver Duckwing pen—

- | | |
|--|------|
| (1) Matthew H. Phares, Shelbyville, Ind..... | 1 00 |
| (2) No award. | |
| (3) No award. | |

Red Pyle cock—

- | | |
|--|--------|
| (1) Thomas M. Campbell, Darlington, Ind..... | 1 00 |
| (2) W. J. Merriott, Marion, Ind..... | 50 |
| (3) Charles McClave, New London, Ohio..... | Ribbon |

Red Pyle hen—

- | | |
|--|------|
| (1) Thomas M. Campbell, Darlington, Ind..... | 3 00 |
| (2) Thomas M. Campbell, Darlington, Ind..... | 2 00 |
| (3) J. A. Hornung, Greensburg, Ind..... | 1 00 |

Red Pyle cockerel—

- | | |
|--|--------|
| (1) Thomas M. Campbell, Darlington, Ind..... | 1 00 |
| (2) Charles McClave, New London, Ohio..... | 50 |
| (3) Thomas M. Campbell, Darlington, Ind..... | Ribbon |

Red Pyle pullet—

- | | |
|--|--------|
| (1) Thomas M. Campbell, Darlington, Ind..... | 1 00 |
| (2) Charles McClave, New London, Ohio..... | 50 |
| (3) Thomas M. Campbell, Darlington, Ind..... | Ribbon |

Red Pyle pen—

- | | |
|--|--------|
| (1) Thomas M. Campbell, Darlington, Ind..... | 1 00 |
| (2) Thomas M. Campbell, Darlington, Ind..... | Ribbon |
| (3) No award. | |

Brown Red Game cock—

- | | |
|--|------|
| (1) Wesley Lanius, Greensburg, Ind..... | 1 00 |
| (2) Thomas M. Campbell, Darlington, Ind..... | 50 |
| (3) No award. | |

Brown Red Game hen—

- | | |
|---|------|
| (1) Wesley Lanius, Greensburg, Ind..... | 1 00 |
| (2) Wesley Lanius, Greensburg, Ind..... | 50 |
| (3) No award. | |

Brown Red Game cockerel—

- | | |
|---|--------|
| (1) Wesley Lanius, Greensburg, Ind..... | 50 |
| (2) Wesley Lanius, Greensburg, Ind..... | Ribbon |
| (3) No award. | |

Brown Red Game pullet—

- | | |
|---|--------|
| (1) Wesley Lanius, Greensburg, Ind..... | 50 |
| (2) Wesley Lanius, Greensburg, Ind..... | Ribbon |
| (3) No award. | |

Brown Red Game pen—

- | | |
|---|--------|
| (1) Wesley Lanius, Greensburg, Ind..... | Ribbon |
| (2) No award. | |
| (3) No award. | |

Red Pyle Game Standard cock—

- | | |
|---|------|
| (1) Wesley Lanius, Greensburg, Ind..... | 1 00 |
| (2) Elbert Bros., Alexandria, Ind..... | 50 |
| (3) No award. | |

Red Pyle Game Standard hen—

- | | |
|---|--------|
| (1) W. J. Marriott, Marion, Ind..... | 1 00 |
| (2) Wesley Lanius, Greensburg, Ind..... | 50 |
| (3) Elbert Bros., Alexandria, Ind..... | Ribbon |

Red Pyle Game Standard cockerel—

- | | |
|---|------|
| (1) Wesley Lanius, Greensburg, Ind..... | 1 00 |
| (2) Wesley Lanius, Greensburg, Ind..... | 50 |
| (3) No award. | |

Red Pyle Game Standard pullet—

- | | |
|---|------|
| (1) Wesley Lanius, Greensburg, Ind..... | 1 00 |
| (2) Wesley Lanius, Greensburg, Ind..... | 1 00 |
| (3) No award. | |

Red Pyle Game Standard pen—

- | | |
|---|--------|
| (1) Wesley Lanius, Greensburg, Ind..... | 1 00 |
| (2) Wesley Lanius, Greensburg, Ind..... | Ribbon |
| (3) No award. | |

BANTAMS OTHER THAN GAME.

Golden Seabright cock—

- | | |
|--|--------|
| (1) Thomas M. Campbell, Darlington, Ind..... | 2 00 |
| (2) Elbert Bros., Alexandria, Ind..... | 1 00 |
| (3) McCoy Bros., Vincennes, Ind..... | Ribbon |

Golden Seabright hen—

- | | |
|--|------|
| (1) Thomas M. Campbell, Darlington, Ind..... | 3 00 |
| (2) T. N. Smiley & Son, Milligan, Ind..... | 2 00 |
| (3) F. M. Meloy, Shelbyville, Ind..... | 1 00 |

Golden Seabright cockerel—

- | | |
|--|------|
| (1) Charles McClave, New London, Ohio..... | 3 00 |
| (2) McCoy Bros., Vincennes, Ind..... | 2 00 |
| (3) McCoy Bros., Vincennes, Ind..... | 1 00 |

Golden Seabright pullet—

- | | |
|--|------|
| (1) Charles McClave, New London, Ohio..... | 3 00 |
| (2) Elbert Bros., Alexandria, Ind..... | 2 00 |
| (3) Charles McClave, New London, Ohio..... | 1 00 |

Golden Seabright pen—

- | | |
|--|------|
| (1) Charles McClave, New London, Ohio..... | 5 00 |
| (2) Thomas M. Campbell, Darlington, Ind..... | 3 00 |
| (3) Elbert Bros., Alexandria, Ind..... | 2 00 |

Silver Seabright cock—

- | | |
|--|--------|
| (1) F. M. Meloy, Shelbyville, Ind..... | 1 00 |
| (2) F. M. Meloy, Shelbyville, Ind..... | 50 |
| (3) Thomas M. Campbell, Darlington, Ind..... | Ribbon |

Silver Seabright hen—

- | | |
|---|------|
| (1) L. H. Seidensticker, Brightwood, Ind..... | 3 00 |
| (2) Thomas M. Campbell, Darlington, Ind..... | 2 00 |
| (3) F. M. Meloy, Shelbyville, Ind..... | 1 00 |

Silver Seabright cockerel—

- | | |
|---|--------|
| (1) L. H. Seidensticker, Brightwood, Ind..... | 2 00 |
| (2) F. M. Meloy, Shelbyville, Ind..... | 1 00 |
| (3) J. A. Hornung, Greensburg, Ind..... | Ribbon |

Silver Seabright pullet—	
(1) F. M. Meloy, Shelbyville, Ind.	3 00
(2) J. A. Hornung, Greensburg, Ind.	2 00
(3) J. A. Hornung, Greensburg, Ind.	1 00
Silver Seabright pen—	
(1) F. M. Meloy, Shelbyville, Ind.	3 00
(2) Thomas M. Campbell, Darlington, Ind.	2 00
(3) J. A. Hornung, Greensburg, Ind.	Ribbon
R. C. B. African cock—	
(1) J. H. Lewis & Son, Cameron, W. Va.	2 60
(2) Thomas M. Campbell, Darlington, Ind.	1 00
(3) Charles McClave, New London, Ohio.	Ribbon
R. C. B. African hen—	
(2) Thomas M. Campbell, Darlington, Ind.	1 00
(2) Thomas H. Campbell, Darlington, Ind.	1 00
(3) Charles McClave, New London, Ohio.	Ribbon
R. C. B. African cockerel—	
(1) Thomas M. Campbell, Darlington, Ind.	1 00
(2) Charles McClave, New London, Ohio.	50
(3) Charles McClave, New London, Ohio.	Ribbon
R. C. B. African pullet—	
(1) Charles McClave, New London, Ohio.	2 00
(2) Charles McClave, New London, Ohio.	1 00
(3) Thomas M. Campbell, Darlington, Ind.	Ribbon
R. C. B. African pen—	
(1) Charles McClave, New London, Ohio.	1 00
(2) Thomas M. Campbell, Darlington, Ind.	Ribbon
(3) No award.	
Buff Cochín cock—	
(1) W. W. Zike, Morristown, Ind.	3 00
(2) Elbert Bros., Alexandria, Ind.	2 00
(3) Clair F. Johnson, Rushville, Ind.	1 00
Buff Cochín hen—	
(1) W. W. Zike, Morristown, Ind.	3 00
(2) J. A. Hornung, Greensburg, Ind.	2 00
(3) Clair F. Johnson, Rushville, Ind.	1 00
Buff Cochín cockerel—	
(1) W. W. Zike, Morristown, Ind.	3 00
(2) W. W. Zike, Morristown, Ind.	2 00
(3) Frank R. Hale & Son, Shelbyville, Ind.	1 00
Buff Cochín pullet—	
(1) W. W. Zike, Morristown, Ind.	3 00
(2) W. W. Zike, Morristown, Ind.	2 00
(3) W. W. Zike, Morristown, Ind.	1 00

Buff Cochin pen—	
(1) W. W. Zike, Morristown, Ind.....	5 00
(2) W. W. Zike, Morristown, Ind.....	3 00
(3) Elbert Bros., Alexandria, Ind.....	2 00
White Cochin cock—	
(1) Elbert Bros., Alexandria, Ind.....	2 00
(2) Frank S. Kirk, Shelbyville, Ind.....	1 00
(3) T. N. Smiley & Son, Milligan, Ind.....	Ribbon
White Cochin hen—	
(1) Frank R. Hale & Son, Shelbyville, Ind.....	3 00
(2) T. N. Smiley & Son, Milligan, Ind.....	2 00
(3) Frank S. Kirk, Shelbyville, Ind.....	1 00
White Cochin cockerel—	
(1) Frank R. Hale & Son, Shelbyville, Ind.....	2 00
(2) Frank R. Hale & Son, Shelbyville, Ind.....	1 00
(3) Frank S. Kirk, Shelbyville, Ind.....	Ribbon
White Cochin pullet—	
(1) Frank R. Hale & Son, Shelbyville, Ind.....	2 00
(2) Frank R. Hale & Son, Shelbyville, Ind.....	1 00
(3) Frank S. Kirk, Shelbyville, Ind.....	Ribbon
White Cochin pen—	
(1) Frank R. Hale & Son, Shelbyville, Ind.....	3 00
(2) Frank S. Kirk, Shelbyville, Ind.....	2 00
(3) T. N. Smiley & Son, Milligan, Ind.....	Ribbon
Black Cochin cock—	
(1) Will J. Blackman, St. Louis, Mo.....	1 00
(2) Frank R. Hale & Son, Shelbyville, Ind.....	50
(3) W. J. Marriott, Marion, Ind.....	Ribbon
Black Cochin hen—	
(1) Frank R. Hale & Son, Shelbyville, Ind.....	1 00
(2) W. J. Marriott, Marion, Ind.....	50
(3) Frank R. Hale & Son, Shelbyville, Ind.....	Ribbon
Black Cochin cockerel—	
(1) Frank R. Hale & Son, Shelbyville, Ind.....	2 00
(2) Frank R. Hale & Son, Shelbyville, Ind.....	1 00
(3) Frank R. Hale & Son, Shelbyville, Ind.....	Ribbon
Black Cochin pullet—	
(1) Frank R. Hale & Son, Shelbyville, Ind.....	3 00
(2) Frank R. Hale & Son, Shelbyville, Ind.....	2 00
(3) Frank R. Hale & Son, Shelbyville, Ind.....	1 00
Black Cochin pen—	
(1) Frank R. Hale & Son, Shelbyville, Ind.....	3 00
(2) Frank R. Hale & Son, Shelbyville, Ind.....	2 00
(3) Frank R. Hale & Son, Shelbyville, Ind.....	Ribbon

TURKEYS.

Bronze cock—	
(1) G. W. Wilkins, Atlanta, Ind.....	3 00
(2) T. N. Smiley & Son, Milligan, Ind.....	2 00
(3) G. W. Wilkins, Atlanta, Ind.....	1 00
Bronze hen—	
(1) G. W. Wilkins, Atlanta, Ind.....	3 00
(2) G. W. Wilkins, Atlanta, Ind.....	2 00
(3) T. N. Smiley & Son, Milligan, Ind.....	1 00
Bronze cockerel—	
(1) T. N. Smiley & Son, Milligan, Ind.....	3 00
(2) T. N. Smiley & Son, Milligan, Ind.....	2 00
(3) No award.	
Bronze pullet—	
(1) T. N. Smiley & Son, Milligan, Ind.....	3 00
(2) No award.	
(3) No award.	
White Holland cock—	
(1) J. S. Smiley & Son, Milligan, Ind.....	3 00
(2) J. A. Hornung, Greensburg, Ind.....	2 00
(3) F. M. Meloy, Shelbyville, Ind.....	1 00
White Holland hen—	
(1) J. A. Hornung, Greensburg, Ind.....	3 00
(2) J. S. Smiley & Son, Milligan, Ind.....	2 00
(3) J. S. Smiley & Son, Milligan, Ind.....	1 00
White Holland cockerel—	
(1) T. N. Smiley & Son, Milligan, Ind.....	3 00
(2) T. N. Smiley & Son, Milligan, Ind.....	2 00
(3) Charles McClave, New London, Ohio.....	1 00
White Holland pullet—	
(1) Charles McClave, New London, Ohio.....	3 00
(2) No award.	
(3) No award.	

GEESE.

Pair Toulouse, old—	
(1) Charles McClave, New London, Ohio.....	3 00
(2) J. A. Hornung, Greensburg, Ohio.....	2 00
(3) T. N. Smiley & Son, Milligan, Ind.....	1 00
Pair Toulouse, young—	
(1) J. S. Smiley & Son, Milligan, Ind.....	3 00
(2) T. N. Smiley & Son, Milligan, Ind.....	2 00
(3) T. N. Smiley & Son, Milligan, Ind.....	1 00
Pair Embden, old—	
(1) J. S. Smiley & Son, Milligan, Ind.....	3 00
(2) T. N. Smiley & Son, Milligan, Ind.....	2 00
(3) J. A. Hornung, Greensburg, Ind.....	1 00

Pair Embden, young—

(1) J. S. Smiley & Son, Milligan, Ind.	3 00
(2) J. S. Smiley & Son, Milligan, Ind.	2 00
(3) T. N. Smiley & Son, Milligan, Ind.	1 00

Pair Chinese, old—

(1) T. N. Smiley & Son, Milligan, Ind.	3 00
(2) J. A. Hornung, Greensburg, Ind.	2 00
(3) No award.	

Pair Chinese, young—

(1) J. A. Hornung, Greensburg, Ind.	3 00
(2) No award.	
(3) No award.	

DUCKS.

Pair Pekin, old—

(1) J. S. Smiley & Son, Milligan, Ind.	3 00
(2) J. A. Hornung, Greensburg, Ind.	2 00
(3) McCoy Bros., Vincennes, Ind.	1 00

Pair Pekin, young—

(1) J. A. Hornung, Greensburg, Ind.	3 00
(2) Charles McClave, New London, Ohio.	2 00
(3) Charles McClave, New London, Ohio.	1 00

Pair Aylesbury, old—

(1) J. A. Hornung, Greensburg, Ind.	3 00
(2) T. N. Smiley & Son, Milligan, Ind.	2 00
(3) Thomas M. Campbell, Darlington, Ind.	1 00

Pair Aylesbury, young—

(1) T. N. Smiley & Son, Milligan, Ind.	3 00
(2) T. N. Smiley & Son, Milligan, Ind.	2 00
(3) T. N. Smiley & Son, Milligan, Ind.	1 00

Pair Rouen, old—

(1) J. A. Hornung, Greensburg, Ind.	3 00
(2) Charles McClave, New London, Ohio.	2 00
(3) No award.	

Pair Rouen, young—

(1) J. A. Hornung, Greensburg, Ind.	3 00
(2) J. S. Smiley & Son, Milligan, Ind.	2 00
(3) No award.	

PIGEONS.

Best display, ten varieties, all pure bred—

(1) George Ewald, Cincinnati, Ohio.	10 00
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AGRICULTURE.

CLASS L—GRAIN AND SEEDS.

(A. M. Stewart, Madison, Ind., Judge.)

PURE BRED CORN.

Leaming—

(1) J. D. Whitesides, Franklin, Ind.....	\$	4 00
(2) W. O. Swain, Arlington, Ind.....		3 00
(3) L. Marshall Vogler, Hope, Ind.....		2 00

Boone County White—

(1) C. A. Brown, Franklin, Ind.....		4 00
(2) J. D. Whitesides, Franklin, Ind.....		3 00
(3) L. B. Clore, Franklin, Ind.....		2 00

Riley's Favorite—

(1) W. O. Swain, Arlington, Ind.....		4 00
(2) J. D. Whitesides, Franklin, Ind.....		3 00
(3) J. D. Whitesides, Franklin, Ind.....		2 00

Johnson County White Dent—

(1) J. D. Whitesides, Franklin, Ind.....		4 00
(2) C. A. Brown, Franklin, Ind.....		3 00
(3) L. B. Clore, Franklin, Ind.....		2 00

Twenty ears yellow corn—

(1) J. D. Whitesides, Franklin, Ind.....	10 00
(2) O. P. Hollingsworth, New Augusta, Ind.....	7 50
(3) C. A. Brown, Franklin, Ind.....	5 00

Twenty ears white corn—

(1) L. B. Clore, Franklin, Ind.....	10 00
(2) J. D. Whitesides, Franklin, Ind.....	7 50
(3) L. Marshall Vogler, Hope, Ind.....	5 00

Twenty ears any other variety—

(1) F. M. Sanford, Greenfield, Ind.....	10 00
(2) John Marvel, New Augusta, Ind.....	7 50
(3) W. O. Swain, Arlington, Ind.....	5 00

Twenty ears white flint corn—

(1) J. D. Whitesides, Franklin, Ind.....	3 00
(2) J. D. Whitesides, Franklin, Ind.....	2 00
(3) No award.	

One peck white rice popcorn—

(1) J. D. Whitesides, Franklin, Ind.....	3 00
(2) George M. Rumler, Mohawk, Ind.....	2 00
(3) George M. Rumler, Mohawk, Ind.....	1 00

One peck golden popcorn—	
(1) George M. Rumler, Mohawk, Ind.....	3 00
(2) F. M. Whipps, Byhalia, Ohio.....	2 00
(3) Robert H. Steele, Mohawk, Ind.....	1 00
One peck any variety—	
(1) Wesley Lanius, Greensburg, Ind.....	8 00
(2) George M. Rumler, Mohawk, Ind.....	2 00
(3) George M. Rumler, Mohawk, Ind.....	1 00
Six largest ears, any variety—	
(1) L. Marshall Vogler, Hope, Ind.....	5 00
(2) C. A. Brown, Franklin, Ind.....	2 50
Six most perfect ears corn—	
(1) L. Marshall Vogler, Hope, Ind.....	5 00
(2) J. D. Whitesides, Franklin, Ind.....	2 50
Best and most meritorious display of corn—	
(1) F. M. Sanford, Greenfield, Ind.....	50 00
(2) J. D. Whitesides, Franklin, Ind.....	25 00
(3) J. D. Whitesides, Franklin, Ind.....	15 00
(4) John L. Baker, Waldron, Ind.....	10 00
Best one-half bushel white winter wheat—	
(1) J. L. Keckley, Marysville, Ohio.....	4 00
(2) J. L. Keckley, Marysville, Ohio.....	2 00
Best one-half bushel red winter wheat—	
(1) J. L. Keckley, Marysville, Ohio.....	4 00
(2) J. L. Keckley, Marysville, Ohio.....	2 00
Best one-half bushel Fultz wheat—	
(1) J. L. Keckley, Marysville, Ohio.....	4 00
(2) J. L. Keckley, Marysville, Ohio.....	2 00
Best one-half bushel red spring wheat—	
(1) J. L. Keckley, Marysville, Ohio.....	4 00
(2) J. L. Keckley, Marysville, Ohio.....	2 00
Best display of grain in the straw—	
(1) J. L. Keckley, Marysville, Ohio.....	10 00
(2) F. M. Whipps, Byhalia, Ohio.....	5 00
Best display of meadow and pasture grasses—	
(1) J. L. Keckley, Marysville, Ohio.....	8 00
(2) F. M. Whipps, Byhalia, Ohio.....	4 00
One-half bushel rye—	
(1) J. L. Keckley, Marysville, Ohio.....	2 00
(2) J. L. Keckley, Marysville, Ohio.....	1 00
One-half bushel white oats—	
(1) J. L. Keckley, Marysville, Ohio.....	2 00
(2) J. L. Keckley, Marysville, Ohio.....	1 00

One-half bushel black oats—	
(1) J. L. Keckley, Marysville, Ohio.....	2 00
(2) J. L. Keckley, Marysville, Ohio.....	1 00
One-half bushel silver hull buckwheat—	
(1) J. L. Keckley, Marysville, Ohio.....	2 00
(2) George M. Rumler, Mohawk, Ind.....	1 00
One-half bushel barley—	
(1) George M. Rumler, Mohawk, Ind.....	2 00
(2) J. L. Keckley, Marysville, Ohio.....	1 00
One-half bushel millet seed—	
(1) J. L. Keckley, Marysville, Ohio.....	2 00
(2) F. M. Whipps, Byhalia, Ohio.....	1 00
One-half bushel timothy seed—	
(1) J. L. Keckley, Marysville, Ohio.....	2 00
(2) George M. Rumler, Mohawk, Ind.....	1 00
One-half bushel orchard grass seed—	
(1) George M. Rumler, Mohawk, Ind.....	2 00
(2) J. L. Keckley, Marysville, Ohio.....	1 00
One-half bushel Hungarian grass seed—	
(1) J. L. Keckley, Marysville, Ohio.....	2 00
(2) F. M. Whipps, Byhalia, Ohio.....	1 00
One-half bushel Kentucky blue grass seed -	
(1) J. L. Keckley, Marysville, Ohio.....	2 00
(2) George M. Rumler, Mohawk, Ind.....	1 00
One-half bushel mammoth clover seed—	
(1) George M. Rumler, Mohawk, Ind.....	2 00
(2) George M. Rumler, Mohawk, Ind.....	1 00
One-half bushel red clover seed—	
(1) George M. Rumler, Mohawk, Ind.....	2 00
(2) F. M. Whipps, Byhalia, Ohio.....	1 00
One-half bushel flaxseed—	
(1) George M. Rumler, Mohawk, Ind.....	2 00
(2) George M. Rumler, Mohawk, Ind.....	1 00
Best collection of grain and seed grown by exhibitor, seed of 1904—	
(1) George M. Rumler, Mohawk, Ind.....	10 00
(2) J. L. Keckley, Marysville, Ohio.....	5 00
Best display and collection of farm products by any county or society in Indiana—	
(1) J. D. Whitesides, Franklin, Ind.....	60 00
(2) John Marvel, New Augusta, Ind.....	30 00

CLASS LI—VEGETABLES.

(U. M. Stewart, Madison, Ind., Judge.)

Three white egg plant—	
(1) B. F. Whaley & Son, Shelbyville, Ind.....	\$ 2 00
(2) B. F. Whaley & Son, Shelbyville, Ind.....	1 00
(3) F. M. Whipps, Byhalia, Ohio.....	50
Three New York purple egg plant—	
(1) C. P. Bradley, South Bend, Ind.....	2 00
(2) F. M. Whipps, Byhalia, Ohio.....	1 00
(3) B. F. Whaley & Son, Shelbyville, Ind.....	50
Twelve best cucumbers—	
(1) George M. Rumler, Mohawk, Ind.....	2 00
(2) John Marvel, New Augusta, Ind.....	1 00
(3) B. F. Whaley & Son, Shelbyville, Ind.....	50
Six cauliflowers—	
(1) Henry Ellwanger, Indianapolis, Ind.....	2 00
(2) F. M. Whipps, Byhalia, Ohio.....	1 00
(3) John Marvel, New Augusta, Ind.....	50
Twelve ears late sweet corn—	
(1) B. F. Whaley & Son, Shelbyville, Ind.....	2 00
(2) O. P. Hollingsworth, New Augusta, Ind.....	1 00
(3) Henry Ellwanger, Indianapolis, Ind.....	50
Twelve ears early sweet corn—	
(1) J. D. Whitesides, Franklin, Ind.....	2 00
(2) F. M. Whipps, Byhalia, Ohio.....	1 00
(3) John Marvel, New Augusta, Ind.....	50
Sib Hubbard squash—	
(1) F. M. Whipps, Byhalia, Ohio.....	2 00
(2) John Marvel, New Augusta, Ind.....	1 00
(3) John L. Baker, Waldron, Ind.....	50
Three Boston Marrow squash—	
(1) George M. Rumler, Mohak, Ind.....	2 00
(2) John L. Baker, Waldron, Ind.....	1 00
(3) John Marvel, New Augusta, Ind.....	50
Three Marblehead squash—	
(1) F. M. Whipps, Byhalia, Ohio.....	2 00
(2) J. D. Whitesides, Franklin, Ind.....	1 00
(3) John L. Baker, Waldron, Ind.....	50
Three Red Hubbard squash—	
(1) John Marvel, New Augusta, Ind.....	2 00
(2) J. D. Whitesides, Franklin, Ind.....	1 00
(3) F. M. Whipps, Byhalia, Ohio.....	50

Three Kershaw squash—	
(1) J. L. Keckley, Marysville, Ohio.....	2 00
(2) John Marvel, New Augusta, Ind.....	1 00
(3) John A. Wilson, Olney, Ill.....	50
Three Summer Crooked-neck squash—	
(1) J. L. Keckley, Marysville, Ohio.....	2 00
(2) F. M. Whipps, Byhalia, Ohio.....	1 00
(3) John Marvel, New Augusta, Ind.....	50
Three field pumpkins—	
(1) J. D. Whitesides, Franklin, Ind.....	2 00
(2) John L. Baker, Waldron, Ind.....	1 00
(3) J. D. Whitesides, Franklin, Ind.....	50
Largest squash—	
(1) John Marvel, New Augusta, Ind.....	2 00
(2) John A. Wilson, Olney, Ill.....	1 00
(3) John L. Baker, Waldron, Ind.....	50
Largest pumpkin—	
(1) J. D. Whitesides, Franklin, Ind.....	2 00
(2) B. F. Whaley & Son, Shelbyville, Ind.....	1 00
(3) J. D. Whitesides, Franklin, Ind.....	50
Six Drumhead cabbage—	
(1) J. L. Keckley, Marysville, Ohio.....	2 00
(2) B. F. Cole, Trafalgar, Ind.....	1 00
(3) Henry Ellwanger, Indianapolis, Ind.....	50
Six Flat Dutch cabbage—	
(1) F. M. Whipps, Byhalia, Ohio.....	2 00
(2) Henry Ellwanger, Indianapolis, Ind.....	1 00
(3) O. P. Hollingsworth, New Augusta, Ind.....	50
Six early cabbage—	
(1) J. L. Keckley, Marysville, Ohio.....	2 00
(2) B. F. Cole, Trafalgar, Ind.....	1 00
(3) O. P. Hollingsworth, New Augusta, Ind.....	50
Six red cabbage—	
(1) Henry Ellwanger, Indianapolis, Ind.....	2 00
(2) F. M. Whipps, Byhalia, Ohio.....	1 00
(3) Geo. M. Rumler, Mohawk, Ind.....	50
Twelve stalks of celery—	
(1) Henry Ellwanger, Indianapolis, Ind.....	2 00
(2) John Marvel, New Augusta, Ind.....	1 00
(3) Geo. M. Rumler, Mohawk, Ind.....	50
Best display celery—	
(1) Henry Ellwanger, Indianapolis, Ind.....	3 00
(2) No award.	
(3) No award.	

One-half peck lima beans, germ shell—	
(1) John Marvel, New Augusta, Ind.....	2 00
(2) Henry Ellwanger, Indianapolis, Ind.....	1 00
(3) Evan Swift, Franklin, Ind.....	50
One-half peck White Marrowfat beans—	
(1) J. L. Keckley, Marysville, Ohio.....	2 00
(2) Geo. M. Rumler, Mohawk, Ind.....	1 00
(3) Geo. M. Rumler, Mohawk, Ind.....	50
One-half peck White Navy beans—	
(1) F. M. Sanford, Greenfield, Ind.....	2 00
(2) Geo. M. Rumler, Mohawk, Ind.....	1 00
(3) Geo. M. Rumler, Mohawk, Ind.....	50
One-half peck colored kidney beans—	
(1) John Marvel, New Augusta, Ind.....	2 00
(2) Geo. M. Rumler, Mohawk, Ind.....	1 00
(3) Geo. M. Rumler, Mohawk, Ind.....	50
One-half peck white kidney beans—	
(1) Geo. M. Rumler, Mohawk, Ind.....	2 00
(2) John Marvel, New Augusta, Ind.....	1 00
(3) Geo. M. Rumler, Mohawk, Ind.....	50
One-half peck garden peas, dry—	
(1) F. M. Whipps, Byhalia, Ohio.....	2 00
(2) J. L. Keckley, Marysville, Ohio.....	1 00
(3) Geo. M. Rumler, Mohawk, Ind.....	50
Best peck purple tomatoes—	
(1) F. M. Sanford, Greenfield, Ind.....	2 00
(2) B. F. Whaley & Son, Shelbyville, Ind.....	1 00
(3) Henry Ellwanger, Indianapolis, Ind.....	50
Best peck red tomatoes—	
(1) J. L. Keckley, Marysville, Ohio.....	2 00
(2) B. F. Whaley & Son, Shelbyville, Ind.....	1 00
(3) John Marvel, New Augusta, Ind.....	50
Best peck yellow tomatoes—	
(1) Henry Ellwanger, Indianapolis, Ind.....	2 00
(2) Geo. M. Rumler, Mohawk, Ind.....	1 00
(3) F. M. Whipps, Byhalia, Ohio.....	50
Collection of tomatoes, ten varieties—	
(1) F. M. Sanford, Greenfield, Ind.....	3 00
(2) John Marvel, New Augusta, Ind.....	2 00
(3) Henry Ellwanger, Indianapolis, Ind.....	1 00
Six largest and best nutmeg melons—	
(1) John Marvel, New Augusta, Ind.....	2 00
(2) F. M. Whipps, Byhalia, Ohio.....	1 00
(3) B. F. Whaley & Son, Shelbyville, Ind.....	50

Six largest and best musk melons—	
(1) Henry Ellwanger, Indianapolis, Ind.....	2 00
(2) F. M. Whipps, Byhalia, Ohio.....	1 00
(3) B. F. Whaley & Son, Shelbyville, Ind.....	50
Six largest and best Gypsy water melons—	
(1) Henry Ellwanger, Indianapolis, Ind.....	2 00
(2) F. M. Whipps, Byhalia, Ohio.....	1 00
(3) No award.	
Six largest and best Sweetheart melons—	
(1) Henry Ellwanger, Indianapolis, Ind.....	2 00
(2) F. M. Whipps, Byhalia, Ohio.....	1 00
(3) No award.	
Six largest and best White Icing melons—	
(1) Henry Ellwanger, Indianapolis, Ind.....	2 00
(2) F. M. Whipps, Byhalia, Ohio.....	1 00
(3) B. F. Whaley & Son, Shelbyville, Ind.....	50
Display musk melons, not less than six varieties—	
(1) John Marvel, New Augusta, Ind.....	5 00
(2) Henry Ellwanger, Indianapolis, Ind.....	3 00
(3) F. M. Whipps, Byhalia, Ohio.....	2 00
Display of water melons, not less than six varieties—	
(1) Henry Ellwanger, Indianapolis, Ind.....	5 00
(2) F. M. Whipps, Byhalia, Ohio.....	3 00
(3) No award.	
Largest and best collection of vegetables—	
(1) B. F. Whaley & Son, Shelbyville, Ind.....	15 00
(2) F. M. Whipps, Byhalia, Ohio.....	10 00
(3) Henry Ellwanger, Indianapolis, Ind.....	5 00
Peck of peppers for pickling—	
(1) O. P. Hollingsworth, New Augusta, Ind.....	2 00
(2) B. F. Whaley & Son, Shelbyville, Ind.....	1 00
(3) John Marvel, New Augusta, Ind.....	50
Display of peppers—	
(1) Henry Ellwanger, Indianapolis, Ind.....	2 00
(2) O. P. Hollingsworth, New Augusta, Ind.....	1 00
(3) John A. Wilson, Olney, Ill.....	50

CLASS LII—ROOT CROP.

(U. M. Stewart, Madison, Ind., Judge.)

Six purple top turnips—	
(1) B. F. Whaley & Son, Shelbyville, Ind.....	\$ 2 00
(2) J. L. Keckley, Marysville, Ohio.....	1 00
(3) Henry Ellwanger, Indianapolis, Ind.....	50

Six any other variety turnips—	
(1) Henry Ellwanger, Indianapolis, Ind.....	2 00
(2) B. F. Whaley & Son, Shelbyville, Ind.....	1 00
(3) B. F. Whaley & Son, Shelbyville, Ind.....	50
Six carrots for table—	
(1) J. L. Keckley, Marysville, Ohio.....	2 00
(2) Henry Ellwanger, Indianapolis, Ind.....	1 00
(3) John L. Baker, Waldron, Ind.....	50
Six carrots for stock—	
(1) J. D. Whitesides, Franklin, Ind.....	2 00
(2) J. D. Whitesides, Franklin, Ind.....	1 00
(3) J. L. Keckley, Marysville, Ohio.....	50
Six roots salsify—	
(1) J. L. Keckley, Marysville, Ohio.....	2 00
(2) John Marvel, New Augusta, Ind.....	1 00
(3) J. D. Whitesides, Franklin, Ind.....	50
Six roots horseradish—	
(1) Henry Ellwanger, Indianapolis, Ind.....	2 00
(2) F. M. Whipps, Byhalia, Ohio.....	1 00
(3) John A. Wilson, Olney, Ill.....	50
Six long red table beets—	
(1) John Marvel, New Augusta, Ind.....	2 00
(2) F. M. Whipps, Byhalia, Ohio.....	1 00
(3) J. D. Whitesides, Franklin, Ind.....	50
Six turnip beets—	
(1) J. D. Whitesides, Franklin, Ind.....	2 00
(2) J. L. Keckley, Marysville, Ohio.....	1 00
(3) John Marvel, New Augusta, Ind.....	50
Six sugar beets—	
(1) John L. Baker, Waldron, Ind.....	2 00
(2) J. D. Whitesides, Franklin, Ind.....	1 00
(3) J. D. Whitesides, Franklin, Ind.....	50
Six red Mangelwurzel—	
(1) John L. Baker, Waldron, Ind.....	2 00
(2) J. L. Keckley, Marysville, Ohio.....	1 00
(3) J. D. Whitesides, Franklin, Ind.....	50
Six parsnips—	
(1) J. D. Whitesides, Franklin, Ind.....	2 00
(2) F. M. Whipps, Byhalia, Ohio.....	1 00
(3) J. D. Whitesides, Franklin, Ind.....	50
Six turnip radish, same kind—	
(1) J. D. Whitesides, Franklin, Ind.....	2 00
(2) Henry Ellwanger, Indianapolis, Ind.....	1 00
(3) B. F. Whaley & Son, Shelbyville, Ind.....	50

Six winter radishes—

(1) B. F. Whaley & Son, Shelbyville, Ind.....	2 00
(2) F. M. Whipps, Byhalia, Ohio.....	1 00
(3) J. D. Whitesides, Franklin, Ind.....	50

Six long summer radishes—

(1) B. F. Whaley & Son, Shelbyville, Ind.....	2 00
(2) Henry Ellwanger, Indianapolis, Ind.....	1 00
(3) J. D. Whitesides, Franklin, Ind.....	50

Peck of Prizetaker onions—

(1) J. L. Keckley, Marysville, Ohio.....	2 00
(2) John A. Wilson, Olney, Ill.....	1 00
(3) F. M. Whipps, Byhalia, Ohio.....	50

Peck of Yellow Globe onions—

(1) J. L. Keckley, Marysville, Ohio.....	2 00
(2) B. F. Whaley & Son, Shelbyville, Ind.....	1 00
(3) John A. Wilson, Olney, Ill.....	50

Peck of White Globe onions—

(1) John A. Wilson, Olney, Ill.....	2 00
(2) F. M. Whipps, Byhalia, Ohio.....	1 00
(3) J. L. Keckley, Marysville, Ohio.....	50

Half peck yellow onion sets—

(1) Henry Ellwanger, Indianapolis, Ind.....	2 00
(2) J. D. Whitesides, Franklin, Ind.....	1 00
(3) B. F. Whaley & Son, Shelbyville, Ind.....	50

Half peck red onion sets—

(1) B. F. Whaley & Son, Shelbyville, Ind.....	2 00
(2) John Marvel, New Augusta, Ind.....	1 00
(3) J. D. Whitesides, Franklin, Ind.....	50

Half peck white onion sets—

(1) B. F. Whaley & Son, Shelbyville, Ind.....	2 00
(2) J. D. Whitesides, Franklin, Ind.....	1 00
(3) B. F. Whaley & Son, Shelbyville, Ind.....	50

Broom corn—

(1) Geo. F. Rumler, Mohawk, Ind.....	2 00
(2) F. M. Whipps, Byhalia, Ohio.....	1 00
(3) John Marvel, New Augusta, Ind.....	50

Potato onions—

(1) Henry Klinger, Lebanon, Ind.....	2 00
(2) F. M. Whipps, Byhalia, Ohio.....	1 00
(3) John L. Baker, Waldron, Ind.....	50

Yellow Danvers onions—

(1) Henry Klinger, Lebanon, Ind.....	2 00
(2) John A. Wilson, Olney, Ill.....	1 00
(3) F. M. Whipps, Byhalia, Ohio.....	50

Red Weatherfield onions—

(1) John A. Wilson, Olney, Ill.	2 00
(2) Henry Klinger, Lebanon, Ind.	1 00
(3) F. M. Whipps, Byhalia, Ohio.	50

Display of onions, all varieties—

(1) John A. Wilson, Olney, Ill.	5 00
(2) B. F. Whaley & Son, Shelbyville, Ind.	3 00
(3) Henry Klinger, Lebanon, Ind.	1 00

Largest and best display of root crops, all varieties—

(1) J. D. Whitesides, Franklin, Ind.	5 00
(2) Henry Ellwanger, Indianapolis, Ind.	3 00
(3) B. F. Whaley & Son, Shelbyville, Ind.	1 00

CLASS LIII—POTATOES.

(U. M. Stewart, Madison, Ind., Judge.)

Peck Early Rose—

(1) Geo. M. Rumler, Mohawk, Ind.	2 00
(2) J. D. Whitesides, Franklin, Ind.	1 00
(3) F. M. Sanford, Greenfield, Ind.	50

Peck Early Ohio—

(1) J. D. Whitesides, Franklin, Ind.	2 00
(2) F. M. Whipps, Byhalia, Ohio.	1 00
(3) John Marvel, New Augusta, Ind.	50

Peck Bliss Triumph—

(1) F. M. Whipps, Byhalia, Ohio.	2 00
(2) J. L. Keckley, Marysville, Ohio.	1 00
(3) J. D. Whitesides, Franklin, Ind.	50

Peck Uncle Sam—

(1) J. D. Whitesides, Franklin, Ind.	2 00
(2) J. M. Rumler, Mohawk, Ind.	1 00
(3) F. M. Whipps, Byhalia, Ohio.	50

Peck White Rose—

(1) J. D. Whitesides, Franklin, Ind.	2 00
(2) J. L. Keckley, Marysville, Ohio.	1 00
(3) Geo. M. Rumler, Mohawk, Ind.	50

Peck White Elephant—

(1) J. D. Whitesides, Franklin, Ind.	2 00
(2) Geo. M. Rumler, Mohawk, Ind.	1 00
(3) John L. Baker, Waldron, Ind.	50

Peck Beauty Hebron—

(1) Geo. M. Rumler, Mohawk, Ind.	2 00
(2) John L. Baker, Waldron, Ind.	1 00
(3) Geo. M. Rumler, Mohawk, Ind.	50

Peck Rural New York No. 3—

(1) J. D. Whitesides, Franklin, Ind.....	2 00
(2) F. M. Whipps, Byhalia, Ohio.....	1 00
(3) J. L. Keckley, Marysville, Ohio.....	50

Peck Queen of the West—

(1) John L. Baker, Waldron, Ind.....	2 00
(2) F. M. Whipps, Byhalia, Ohio.....	1 00
(3) J. L. Keckley, Marysville, Ohio.....	50

Peck Empire State—

(1) F. M. Whipps, Byhalia, Ohio.....	2 00
(2) Geo. M. Rumler, Mohawk, Ind.....	1 00
(3) Geo. M. Rumler, Byhalia, Ohio.....	50

Peck Green Mountain—

(1) J. D. Whitesides, Franklin, Ind.....	2 00
(2) F. M. Whipps, Byhalia, Ohio.....	1 00
(3) Geo. M. Rumler, Mohawk, Ind.....	50

Peck Early Puritan—

(1) Geo. M. Rumler, Mohawk, Ind.....	2 00
(2) Geo. M. Rumler, Mohawk, Ind.....	1 00
(3) F. M. Whipps, Byhalia, Ohio.....	50

Peck Early Harvest—

(1) Geo. M. Rumler, Mohawk, Ind.....	2 00
(2) O. P. Hollingsworth, New Augusta, Ind.....	1 00
(3) J. D. Whitesides, Franklin, Ind.....	50

Peck Burbank Seedling—

(1) J. D. Whiteside, Franklin, Ind.....	2 00
(2) Geo. M. Rumler, Mohawk, Ind.....	1 00
(3) J. L. Keckley, Marysville, Ohio.....	50

Peck Bovee—

(1) Geo. M. Rumler, Mohawk, Ind.....	2 00
(2) John L. Baker, Waldron, Ind.....	1 00
(3) Geo. M. Rumler, Mohawk, Ind.....	50

Peck Duchess—

(1) J. D. Whitesides, Franklin, Ind.....	2 00
(2) John L. Baker, Waldron, Ind.....	1 00
(3) Geo. M. Rumler, Mohawk, Ind.....	50

Largest and best collection of potatoes, one peck each variety

(1) J. L. Keckley, Marysville, Ohio.....	8 00
(2) F. M. Whipps, Byhalia, Ohio.....	4 00
(3) Geo. M. Rumler, Mohawk, Ind.....	2 00

Yellow sweet potatoes—

(1) J. L. Keckley, Marysville, Ohio.....	2 00
(2) Geo. M. Rumler, Mohawk, Ind.....	1 00
(3) F. M. Whipps, Byhalia, Ohio.....	50

Peck red sweet potatoes—

(1) F. M. Sanford, Greenfield, Ind.....	2 00
(2) John A. Wilson, Olney, Ill.....	1 00
(3) John A. Baker, Waldron, Ind.....	50

Display of sweet potatoes—

(1) F. M. Whipps, Byhalia, Ohio.....	5 00
(2) J. L. Keckley, Marysville, Ohio.....	3 00
(3) B. F. Whaley & Son, Shelbyville, Ind.....	1 00

HORTICULTURE.

CLASS LIV—APPLES. COLLECTIONS.

(E. Y. Teas, Centerville, Ind., Judge.)

Fifteen varieties for home use—

(1) A. H. Bogue, Lagrange, Ind.....	\$ 15 00
(2) S. T. Williamson, Knightstown, Ind.....	10 00

Ten varieties for market—

(1) H. H. Stout, Trafalgar, Ind.....	10 00
(2) A. H. Bogue, Lagrange, Ind.....	6 00

Five varieties for culinary purposes—

(1) A. H. Bogue, Lagrange, Ind.....	5 00
(2) Evan Swift, Franklin, Ind.....	3 00

Plate Maiden Blush—

(1) L. L. Eshelman, Lagrange, Ind.....	1 50
(2) H. M. Stout, Trafalgar, Ind.....	1 00

Plate Smith Cider—

(1) B. F. Cole, Trafalgar, Ind.....	1 50
(2) Joseph Perrine, Lebanon, Ind.....	1 00

Plate Ben Davis—

(1) John A. Wilson, Olney, Ill.....	1 50
(2) Evan Swift, Franklin, Ind.....	1 00

Plate Roman Beauty—

(1) Geo. W. Burton, Leipsic, Ind.....	1 50
(2) Frank Moffitt, Carmel, Ind.....	1 00

Plate Winesap—

(1) Geo. W. Burton, Leipsic, Ind.....	1 50
(2) Chris King, Rushville, Ind.....	1 00

Plate Rambo—

(1) Geo. W. Burton, Leipsic, Ind.....	1 50
(2) A. H. Bogue, Lagrange, Ind.....	1 00

Plate Yellow Bellflower—

- (1) No award.
 (2) Mrs. J. I. Ressler, Brimfield, Ind. 1 00

Plate Falawater—

- (1) Mrs. J. I. Ressler, Brimfield, Ind. 1 50
 (2) A. H. Bogue, Lagrange, Ind. 1 00

Northwestern Greening—

- (1) S. T. S. Williams, Knightstown, Ind. 1 50
 (2) A. H. Bogue, Lagrange, Ind. 1 00

Plate Willow Twig—

- (1) H. M. Stout, Trafalgar, Ind. 1 50
 (2) Evan Swift, Franklin, Ind. 1 00

Plate Westfield (Seek-No-Further)—

- (1) H. M. Stout, Trafalgar, Ind. 1 50
 (2) Evan Swift, Franklin, Ind. 1 00

Plate Wagener—

- (1) H. M. Stout, Trafalgar, Ind. 1 50
 (2) L. L. Eshelman, Lagrange, Ind. 1 00

Plate Gravenstein—

- (1) Mrs. J. I. Ressler, Brimfield, Ind. 1 50
 (2) H. M. Stout, Trafalgar, Ind. 1 00

Plate Red Beltzheimer—

- (1) A. H. Bogue, Lagrange, Ind. 1 50
 (2) S. T. S. Williams, Knightstown, Ind. 1 00

Plate Fameuse or Snow—

- (1) A. H. Bogue, Lagrange, Ind. 1 50
 (2) Mrs. J. I. Ressler, Brimfield, Ind. 1 00

Plate Moore's Sweet—

- (1) H. M. Stout, Trafalgar, Ind. 1 50
 (2) Evan Swift, Franklin, Ind. 1 00

Plate Tompkin's King—

- (1) B. F. Cole, Trafalgar, Ind. 1 50
 (2) Evan Swift, Franklin, Ind. 1 00

Plate Hubbardston—

- (1) M. M. Stout, Trafalgar, Ind. 1 50
 (2) Frank Moffitt, Carmel, Ind. 1 00

Plate Red Canada—

- (1) H. M. Stout, Trafalgar, Ind. 1 50
 (2) S. T. S. Williams, Knightstown, Ind. 1 00

Plate Rhode Island Greening—

- (1) Chris King, Rushville, Ind. 1 50
 (2) H. M. Stout, Trafalgar, Ind. 1 00

Plate Fall Wine—

- (1) Geo. W. Burton, Leipsic, Ind. 1 50
 (2) H. M. Stout, Trafalgar, Ind. 1 00

Plate Duchess—

- (1) John G. Hite, Madison, Ind. 1 50
 (2) C. P. Bradley, South Bend, Ind. 1 00

Plate Wolf River—

- (1) A. H. Bogue, Lagrange, Ind. 1 50
 (2) W. L. DeVilbiss, Ft. Wayne, Ind. 1 00
 (3) W. L. DeVilbiss, Ft. Wayne, Ind. 1 00

Plate Yellow Transparent—

- (1) A. H. Bogue, Lagrange, Ind. 1 50
 (2) B. F. Cole, Trafalgar, Ind. 1 00

Plate Bailey's Sweet—

- (1) Evan Swift, Franklin, Ind. 1 50
 (2) H. M. Stout, Trafalgar, Ind. 1 00

Plate White Pippin—

- (1) Frank Moffitt, Carmel, Ind. 1 50
 (2) Chris King, Rushville, Ind. 1 00

Plate Baldwin—

- (1) H. M. Stout, Trafalgar, Ind. 1 50
 (2) Evan Swift, Franklin, Ind. 1 00

Plate York Imperial—

- (1) H. M. Stout, Trafalgar, Ind. 1 50
 (2) Evan Swift, Franklin, Ind. 1 50

Plate Northern Spy—

- (1) Mrs. J. I. Ressler, Brimfield, Ind. 1 50
 (2) Chris King, Rushville, Ind. 1 00

Plate Grimes Golden—

- (1) S. T. S. Williams, Knightstown, Ind. 1 50
 (2) Frank Moffitt, Carmel, Ind. 1 00

Plate Indiana Favorite—

- (1) S. T. S. Williams, Knightstown, Ind. 1 50
 (2) A. H. Bogue, Lagrange, Ind. 1 00

Plate Belmont—

- (1) A. H. Bogue, Lagrange, Ind. 1 00
 (2) No award.

Plate Jonathan—

- (1) Evan Swift, Franklin, Ind. 1 50
 (2) Chris King, Rushville, Ind. 1 00

Plate Lansingburg—

- (1) S. T. S. Williams, Knightstown, Ind. 1 50
 (2) H. M. Stout, Trafalgar, Ind. 1 00

Plate Talman Sweet—

- (1) Mrs. J. M. Smock, Southport, Ind. 1 50
 (2) L. L. Eshelman, Lagrange, Ind. 1 00

Plate Vandevere—	
(1) A. H. Bogue, Lagrange, Ind.....	1 50
(2) W. F. DeVilbiss, Ft. Wayne, Ind.....	1 00
Plate Twenty-Ounce—	
(1) A. H. Bogue, Lagrange, Ind.....	1 50
(2) B. F. Cole, Trafalgar, Ind.....	1 00
Plate Rall's Genet—	
(1) Geo. W. Burton, Leipsic, Ind.....	1 50
(2) D. F. Corwin, Springboro, Ohio.....	1 00
Plate Wealthy—	
(1) Chris King, Rushville, Ind.....	1 50
(2) Mrs. J. I. Ressler, Brimfield, Ind.....	1 00
Plate Stark—	
(1) Geo. W. Burton, Leipsic, Ind.....	1 50
(2) Chris King, Rushville, Ind.....	1 00
Plate Pewaukee—	
(1) Frank Mollitt, Carmel, Ind.....	1 50
(2) Mrs. J. I. Ressler, Brimfield, Ind.....	1 00
Plate English Russet—	
(1) Mrs. J. I. Ressler, Brimfield, Ind.....	1 50
(2) B. F. Cole, Trafalgar, Ind.....	1 00
Plate Mann—	
(1) Evan Swift, Franklin, Ind.....	1 50
(2) H. M. Stout, Trafalgar, Ind.....	1 00
Plate Peck's Pleasant—	
(1) D. F. Corbin, Springboro, Ohio.....	1 50
(2) Joseph Perrine, Lebanon, Ind.....	1 00
Plate Missouri Pippin—	
(1) No award.	
(2) No award.	
Plate Gano—	
(1) Mrs. J. I. Ressler, Brimfield, Ind.....	1 50
(2) No award.	
Plate Gideon—	
(1) H. M. Stout, Trafalgar, Ind.....	1 50
(2) A. H. Bogue, Lagrange, Ind.....	1 00
Plate Benoni—	
(1) Chris King, Rushville, Ind.....	1 50
(2) L. L. Eshelman, Lagrange, Ind.....	1 00
Plate Mammoth Black Twig—	
(1) John A. Wilson, Olney, Ill.....	1 50
(2) D. F. Corwin, Springboro, Ohio.....	1 00
Plate Newton Spitzenburg—	
(1) Evan Swift, Franklin, Ind.....	1 50
(2) A. H. Bogue, Lagrange, Ind.....	1 00

Plate Autumn Strawberry—

- (1) L. L. Eshelman, Lagrange, Ind. 1 50
 (2) Mrs. J. I. Ressler, Brimfield, Ind. 1 00

Plate McIntosh Red—

- (1) Mrs. J. I. Ressler, Brimfield, Ind. 1 50
 (2) A. H. Bogue, Lagrange, Ind. 1 00

Plate largest, any kind—

- (1) A. H. Bogue, Lagrange, Ind. 1 50
 (2) S. T. S. Williams, Knightstown, Ind. 1 00

Plate Shenango—

- (1) John G. Hitz, Madison, Ind. 1 50
 (2) Geo. W. Burton, Leipsic, Ind. 1 00

Plate Arkansas Black—

- (1) No award.
 (2) No award.

Plate Arkansas Beauty—

- (1) No award.
 (2) No award.

Plate Plum's Cider—

- (1) No award.
 (2) No award.

CRAB APPLES.

Plate Hyslop—

- (1) H. M. Stout, Trafalgar, Ind. 1 00
 (2) A. H. Bogue, Lagrange, Ind. 50

Plate Martha—

- (1) B. F. Cole, Trafalgar, Ind. 1 00

Plate Whitney—

- (1) L. L. Eshelman, Lagrange, Ind. 1 00

Plate Kentucky Red Cider—

- (1) Geo. W. Burton, Leipsic, Ind. 1 00
 (2) No award.

Five varieties crab apples—

- (1) H. M. Stout, Trafalgar, Ind. 2 00
 (2) D. E. Fuller, Osgood, Ind. 1 00

PEARS—SINGLE PLATES.

Plate Bartlett—

- (1) B. F. Cole, Trafalgar, Ind. 1 50
 (2) J. C. Grossman, Wolcottville, Ind. 1 00

Plate Anjou—

- (1) C. P. Bradley, South Bend, Ind. 1 50
 (2) A. H. Bogue, Lagrange, Ind. 1 00

Plate Angouleme (Duchess)—

- | | |
|--------------------------------------|------|
| (1) Frank Moffitt, Carmel, Ind..... | 1 80 |
| (2) H. M. Stout, Trafalgar, Ind..... | 1 00 |

Plate Flemish Beauty—

- | | |
|---|------|
| (1) C. P. Bradley, South Bend, Ind..... | 1 50 |
| (2) A. H. Bogue, Lagrange, Ind..... | 1 00 |

Plate Howell—

- | | |
|--------------------------------------|------|
| (1) H. M. Stout, Trafalgar, Ind..... | 1 50 |
| (2) Evan Swift, Franklin, Ind..... | 1 00 |

Plate Keiffer—

- | | |
|---------------------------------------|------|
| (1) Evan Swift, Franklin, Ind..... | 1 50 |
| (2) Joseph Perrine, Lebanon, Ind..... | 1 00 |

Plate Louis Bon—

- | | |
|------------------------------------|------|
| (1) Evan Swift, Franklin, Ind..... | 1 50 |
| (2) No award. | |

Plate Sheldon—

- | | |
|-------------------------------------|------|
| (1) Evan Swift, Franklin, Ind..... | 1 50 |
| (2) B. F. Cole, Trafalgar, Ind..... | 1 00 |

Plate Seckel—

- | | |
|--------------------------------------|------|
| (1) H. M. Stout, Trafalgar, Ind..... | 1 50 |
| (2) B. F. Cole, Trafalgar, Ind..... | 1 00 |

Plate Easter Beurre—

- | | |
|---------------|--|
| (1) No award. | |
| (2) No award. | |

Plate Lawrence—

- | | |
|------------------------------------|------|
| (1) Evan Swift, Franklin, Ind..... | 1 50 |
| (2) No award. | |

Plate Winter Nelis—

- | | |
|---|------|
| (1) C. P. Bradley, South Bend, Ind..... | 1 50 |
| (2) Evan Swift, Franklin, Ind..... | 1 00 |

Plate Vickar—

- | | |
|--|------|
| (1) Joseph Perrine, Lebanon, Ind..... | 1 50 |
| (2) Ben W. Douglas, Indianapolis, Ind..... | 1 00 |

Plate Arnald—

- | | |
|-------------------------------------|------|
| (1) B. F. Cole, Trafalgar, Ind..... | 1 50 |
| (2) Frank Moffitt, Carmel, Ind..... | 1 00 |

Plate Garber—

- | | |
|--|------|
| (1) H. M. Stout, Trafalgar, Ind..... | 1 00 |
| (2) S. T. S. Williams, Knightstown, Ind..... | 75 |

Plate Koonce—

- | | |
|--|------|
| (1) W. F. DeVilbiss, Ft. Wayne, Ind..... | 1 00 |
| (2) No award. | |

Plate Bosc—

- | | |
|---------------|--|
| (1) No award. | |
| (2) No award. | |

Plate Boussock—	
(1) Joseph Perrine, Lebanon, Ind.....	1 00
(2) No award.	
Plate Clairgean—	
(1) B. F. Cole, Trafalgar, Ind.....	1 00
(2) Joseph Perrine, Lebanon, Ind.....	75
Plate Vermont Beauty—	
(1) No award.	
(2) No award.	
Plate Worden Seckel—	
(1) H. M. Stout, Trafalgar, Ind.....	1 00
(2) No award.	
Plate Idaho—	
(1) No award.	
(2) No award.	
Five varieties for family use—	
(1) C. P. Bradley, South Bend, Ind.....	3 00
(2) A. H. Bogue, Lagrange, Ind.....	1 50
Five varieties for market—	
(1) C. P. Bradley, South Bend, Ind.....	3 00
(2) Evan Swift, Franklin, Ind.....	1 50

PEACHES—COLLECTIONS.

Six varieties for any purpose—	
(1) B. F. Cole, Trafalgar, Ind.....	4 00
(2) C. P. Bradley, South Bend, Ind.....	2 00
Three varieties for market—	
(1) H. M. Stout, Trafalgar, Ind.....	3 00
(2) C. P. Bradley, South Bend, Ind.....	1 50

SINGLE PLATES.

Plate Clings—	
(1) H. M. Stout, Trafalgar, Ind.....	1 50
(2) B. F. Cole, Trafalgar, Ind.....	1 00
Plate Free Stones—	
(1) C. P. Bradley, South Bend, Ind.....	1 50
(2) Chris King, Rushville, Ind.....	1 00
Plate seedlings, not exhibited before—	
(1) B. F. Cole, Trafalgar, Ind.....	1 50
(2) Joseph Perrine, Lebanon, Ind.....	1 00

QUINCES—COLLECTIONS.

Best collection, not less than three varieties—	
(1) W. B. Flick, Lawrence, Ind.....	2 00
(2) D. E. Fuller, Osgood, Ind.....	1 00

SINGLE PLATES.

Plate Orange Quince—	
(1) C. P. Bradley, South Bend, Ind.....	1 50
(2) D. E. Fuller, Osgood, Ind.....	1 00
Plate Meeche's Prolific—	
(1) W. B. Flick, Lawrence, Ind.....	1 50
(2) Evan Swift, Franklin, Ind.....	1 00
Plate Champion—	
(1) Evan Swift, Franklin, Ind.....	1 50
(2) H. M. Stout, Trafalgar, Ind.....	1 00
Plate Missouri Mammoth—	
(1) Evan Swift, Franklin, Ind.....	1 50
(2) W. B. Flick, Lawrence, Ind.....	1 00

PLUMS—COLLECTIONS.

Best collection of native plums—	
(1) Joseph Perrine, Lebanon, Ind.....	2 00
(2) John G. Hitz, Madison, Ind.....	7 00
Best collection of plums, European class—	
(1) John G. Hitz, Madison, Ind.....	2 00
(2) C. P. Bradley, South Bend, Ind.....	1 00
Best collection native plums, Japanese class—	
(1) J. C. Grossman, Wolcottville, Ind.....	2 00
(2) C. P. Bradley, South Bend, Ind.....	1 00
Plate native plums—	
(1) D. F. Corwin, Springboro, Ohio.....	1 50
(2) John Marvel, New Augusta, Ind.....	1 00
Plate European plums—	
(1) C. P. Bradley, South Bend, Ind.....	1 50
(2) John Marvel, New Augusta, Ind.....	1 00
Plate Japanese plums—	
(1) A. H. Bogue, Lagrange, Ind.....	1 50
(2) J. C. Grossman, Wolcottville, Ind.....	1 00

GRAPES—GROWN IN OPEN AIR.

Five varieties for family use—	
(1) W. K. Munson, Grand Rapids, Mich.....	3 00
(2) C. P. Bradley, South Bend, Ind.....	1 50
Six varieties for market—	
(1) C. P. Bradley, South Bend, Ind.....	3 00
(2) W. K. Munson, Grand Rapids, Mich.....	1 50
Five clusters, any kind—	
(1) W. K. Munson, Grand Rapids, Mich.....	2 00
(2) C. P. Bradley, South Bend, Ind.....	1 00

Best collection grown by exhibitor—

(1) C. P. Bradley, South Bend, Ind.....	10 00
(2) W. K. Munson, Grand Rapids, Mich.....	5 00

SINGLE PLATES.

Plate Worden—

(1) W. K. Munson, Grand Rapids, Mich.....	1 50
(2) C. P. Bradley, South Bend, Ind.....	1 00

Plate Concord—

(1) Mrs. Jennie Droke, Southport, Ind.....	1 50
(2) W. K. Munson, Grand Rapids, Mich.....	1 00

Plate Wilder—

(1) Sylvester Johnson, Irvington, Ind.....	1 50
(2) C. P. Bradley, South Bend, Ind.....	1 00

Plate Duchess—

(1) Sylvester Johnson, Irvington, Ind.....	1 50
(2) C. P. Bradley, South Bend, Ind.....	1 00

Plate Duchess—

(1) Sylvester Johnson, Irvington, Ind.....	1 50
(2) No award.	

Plate Brighton—

(1) C. P. Bradley, South Bend, Ind.....	1 50
(1) Sylvester Johnson, Irvington, Ind.....	1 00

Plate Salem—

(1) Sylvester Johnson, Irvington, Ind.....	1 50
(2) C. P. Bradley, South Bend, Ind.....	1 00

Plate Lindley—

(1) Sylvester Johnson, Irvington, Ind.....	1 50
(2) W. B. Flicik, Lawrence, Ind.....	1 00

Plate Pocklington—

(1) Sylvester Johnson, Irvington, Ind.....	1 50
(2) C. P. Bradley, South Bend, Ind.....	1 00

Plate Niagara—

(1) C. P. Bradley, South Bend, Ind.....	1 50
(2) Sylvester Johnson, Irvington, Ind.....	1 00

Plate Diamond—

(1) C. P. Bradley, South Bend, Ind.....	1 50
(2) W. K. Munson, Grand Rapids, Mich.....	1 00

Plate Vergennes—

(1) Sylvester Johnson, Irvington, Ind.....	1 50
(2) C. P. Bradley, South Bend, Ind.....	1 00

Plate McPike—

(1) W. B. Flicik, Lawrence, Ind.....	1 50
(2) Sylvester Johnson, Irvington, Ind.....	1 00

Plate Delaware—

- (1) W. K. Munson, Grand Rapids, Mich..... 1 50
 (2) C. P. Bradley, South Bend, Ind..... 1 00

Plate Agawan—

- (1) C. P. Bradley, South Bend, Ind..... 1 50
 (2) C. P. Bradley, South Bend, Ind..... 1 00

Plate Catawba—

- (1) Sylvester Johnson, Irvington, Ind..... 1 50
 (2) H. M. Stout, Trafalgar, Ind..... 1 00

Plate Poughkeepsie Red—

- (1) Sylvester Johnson, Irvington, Ind..... 1 50
 (2) No award.

Plate Ulster Prolific—

- (1) Sylvester Johnson, Irvington, Ind..... 1 50
 (2) No award.

Plate Moore's Early—

- (1) W. K. Munson, Grand Rapids, Mich..... 1 50
 (2) C. P. Bradley, South Bend, Ind..... 1 00

Plate Ives—

- (1) C. P. Bradley, South Bend, Ind..... 1 50
 (2) C. P. Bradley, South Bend, Ind..... 1 00

Plate Carman—

- (1) Sylvester Johnson, Irvington, Ind..... 1 50
 (2) No award.

Plate Mills—

- (1) Sylvester Johnson, Irvington, Ind..... 1 50
 (2) No award.

Plate Aminia—

- (1) Sylvester Johnson, Irvington, Ind..... 1 50
 (2) No award.

Plate Woodruff Red—

- (1) C. P. Bradley, South Bend, Ind..... 1 50
 (2) Sylvester Johnson, Irvington, Ind..... 1 00

Plate Wyoming Red—

- (1) W. K. Munson, Grand Rapids, Mich..... 1 50
 (2) Sylvester Johnson, Irvington, Ind..... 1 00

Plate Johnson—

- (1) Sylvester Johnson, Irvington, Ind..... 1 50
 (2) No award.

Plate Green Mountain—

- (1) W. K. Munson, Grand Rapids, Mich..... 1 50
 (2) Sylvester Johnson, Irvington, Ind..... 1 00

Plate Empire State—

- (1) C. P. Bradley, South Bend, Ind..... 1 50
 (2) C. P. Bradley, South Bend, Ind..... 1 00

Plate Campbell—	
(1) Sylvester Johnson, Irvington, Ind.	1 50
(2) No award.	
Plate hothouse grapes—	
(1) Sylvester Johnson, Irvington, Ind.	1 50
(2) No award.	
Plate seedlings, not named—	
(1) Sylvester Johnson, Irvington, Ind.	1 50
(2) Mrs. E. T. Drake, Edinburg, Ind.	1 00
Plate Jefferson—	
(1) Sylvester Johnson, Irvington, Ind.	1 50
(2) No award.	
Plate Clinton—	
(1) C. P. Bradley, South Bend, Ind.	1 50
(2) Sylvester Johnson, Irvington, Ind.	1 00
Plate Brilliant—	
(1) Sylvester Johnson, Irvington, Ind.	1 50
(2) No award.	
Plate Prentis—	
(1) Sylvester Johnson, Irvington, Ind.	1 50
(2) No award.	
Plate Lady Washington—	
(1) Sylvester Johnson, Irvington, Ind.	1 50
(2) No award.	
Plate Cottage—	
(1) Sylvester Johnson, Irvington, Ind.	1 50
(2) C. P. Bradley, South Bend, Ind.	1 00
Plate Hayes—	
(1) Sylvester Johnson, Irvington, Ind.	1 50
(2) No award.	
Plate Isabella—	
(1) Sylvester Johnson, Irvington, Ind.	1 50
(2) H. M. Stout, Trafalgar, Ind.	1 00
Plate Champion—	
(1) C. P. Bradley, South Bend, Ind.	1 50
(2) W. B. Flick, Lawrence, Ind.	1 00

MISCELLANEOUS.

Plate persimmons—	
(1) D. E. Fuller, Osgood, Ind.	1 00
(2) D. F. Cole, Trafalgar, Ind.	50
Plate pawpaws—	
(1) D. E. Fuller, Osgood, Ind.	1 00
(2) Frank Moffitt, Carmel, Ind.	50

Collection of native nuts, not less than five varieties—

(1) Mrs. J. I. Ressler, Brimfield, Ind.....	1 00
(2) F. M. Sanford, Greenfield, Ind.....	50

CHAMPION.

Best and most artistic display of fruits by any county society in Indiana—

(1) A. H. Bogue, Lagrange, Ind.....	50 00
(2) Evan Swift, Franklin, Ind.....	40 00
(3) Mrs. J. I. Ressler, Brimfield, Ind.....	30 00
(4) C. W. Foote, South Bend, Ind.....	20 00

INDIVIDUAL SWEEPSTAKES.

Best and most artistic display of fruits grown and exhibited by one individual in Indiana, not less than fifty varieties—

(1) C. P. Bradley, South Bend, Ind.....	25 00
(2) W. B. Flick, Lawrence, Ind.....	15 00

CLASS LV—SPECIAL PREMIUMS OFFERED BY THE INDIANA HORTICULTURAL SOCIETY.

APPLES.

Six varieties apples for market, Southern Indiana

(1) Geo. W. Burton, Leipsic, Ind.....	\$ 5 00
(2) D. E. Fuller, Osgood, Ind.....	2 50
(3) No award.	

Six varieties apples for market, Central Indiana -

(1) S. T. S. Williams, Knightstown, Ind.....	5 00
(2) No award.	
(3) No award.	

Six varieties apples for market, Northern Indiana—

(1) W. F. DeVilbiss, Ft. Wayne, Ind.....	5 00
(2) No award.	
(3) No award.	

Ten varieties apples for home use, Southern Indiana—

(1) D. E. Fuller, Osgood, Ind.....	5 00
(2) Geo. W. Burton, Leipsic, Ind.....	2 50
(3) No award.	

Ten varieties apples for home use, Central Indiana—

(1) S. T. S. Williams, Knightstown, Ind.....	5 00
(2) No award.	
(3) No award.	

Ten varieties apples for home use, Northern Indiana—	
(1) W. F. DeVilbiss, Ft. Wayne, Ind.....	5 00
(2) No award.	
(3) No award.	
Largest and best ten apples, any variety—	
(1) J. M. Zion.....	2 00
(2) No award.	
(3) No award.	
Ten most beautiful apples, any variety—	
(1) J. M. Zion.....	2 00
(2) S. T. S. Williams, Knightstown, Ind.....	1 00
(3) No award.	
Best and most attractive bushel box of apples, packed for shipment—	
(1) John G. Hitz, Madison, Ind.....	5 00
(2) S. T. S. Williams, Knightstown, Ind.....	2 50
(3) No award.	
Best collection of apples by one grower—	
(1) No award.	
(2) No award.	
(3) No award.	
Best collection of apples, open to all regardless of where grown—	
(1) A. H. Bogue, Lagrange, Ind.....	4 00
(2) No award.	
(3) No award.	
Most attractive and best package for exhibiting apples, pears, peaches and plums—	
(1) No award.	
(2) No award.	
(3) No award.	

PEARS.

Ten varieties of pears by one grower—	
(1) No award.	
(2) No award.	
(3) No award.	
Ten varieties of pears (regardless of where grown)—	
(1) H. M. Stout, Trafalgar, Ind.....	4 00
(2) No award.	
(3) No award.	
Two varieties fall pears—	
(1) H. M. Stout, Trafalgar, Ind.....	1 50
(2) Evan Swift, Franklin, Ind.....	75
(3) D. E. Fuller, Osgood, Ind.....	50

Three varieties winter pears—

(1) Evan Swift, Franklin, Ind.....	1 50
(2) D. E. Fuller, Osgood, Ind.....	75
(3) H. M. Stout, Trafalgar, Ind.....	50

Peck of Keiffer pears—

- (1) No award.
- (2) No award.
- (3) No award.

Peck of Angouleme pears—

(1) No award.	
(2) W. B. Flick, Lawrence, Ind.....	1 00
(3) No award.	

Peck of Garber pears—

- (1) No award.
- (2) No award.
- (3) No award.

Peck of Anjou pears—

- (1) No award.
- (2) No award.
- (3) No award.

Peck Lawrence pears—

- (1) No award.
- (2) No award.
- (3) No award.

Peck Bartlett pears—

- (1) No award.
- (2) No award.
- (3) No award.

Peck Flemish Beauty—

- (1) No award.
- (2) No award.
- (3) No award.

Peck any variety not named above—

(1) Ben W. Douglas, Indianapolis, Ind.....	2 00
(2) No award.	
(3) No award.	

Largest pears, any variety—

- (1) No award.
- (2) No award.
- (3) No award.

PEACHES.

Best collection of peaches, not less than five varieties, grown in the State—

(1) John G. Hitz, Madison, Ind.....	3 00
(2) No award.	
(3) No award.	

Best collection of peaches, not less than five varieties, regardless of where grown—

- | | |
|-------------------------------------|------|
| (1) John G. Hitz, Madison, Ind..... | 2 50 |
| (2) No award. | |
| (3) No award. | |

Twenty-five largest peaches, any variety, grown in Indiana—

- | | |
|-------------------------------------|------|
| (1) John G. Hitz, Madison, Ind..... | 2 50 |
| (2) No award. | |
| (3) No award. | |

GRAPES.

Best three varieties black grapes for market—

- | | |
|---|------|
| (1) W. K. Munson, Grand Rapids, Mich..... | 3 00 |
| (2) C. P. Bradley, South Bend, Ind..... | 1 50 |
| (3) John G. Hitz, Madison, Ind..... | 1 00 |

Best three varieties white grapes—

- | | |
|---|------|
| (1) C. P. Bradley, South Bend, Ind..... | 3 00 |
| (2) W. K. Munson, Grand Rapids, Mich..... | 1 50 |
| (3) John G. Hitz, Madison, Ind..... | 1 00 |

Three varieties red grapes for market—

- | | |
|---|------|
| (1) C. P. Bradley, South Bend, Ind..... | 3 00 |
| (2) John G. Hitz, Madison, Ind..... | 1 50 |
| (3) No award. | |

Best five varieties grapes for home use—

- | | |
|---|------|
| (1) C. P. Bradley, South Bend, Ind..... | 3 00 |
| (2) W. K. Munson, Grand Rapids, Mich..... | 1 50 |
| (3) No award. | |

Largest cluster of grapes, any variety—

- | | |
|---|------|
| (1) W. K. Munson, Grand Rapids, Mich..... | 1 00 |
| (2) No award. | |
| (3) No award. | |

Most attractive and best package for exhibiting grapes and berries—

- | | |
|---------------|--|
| (1) No award. | |
| (2) No award. | |
| (3) No award. | |

MISCELLANEOUS.

Best peck shell bark hickory nuts—

- | | |
|---|------|
| (1) H. M. Stout, Trafalgar, Ind..... | 1 00 |
| (2) F. M. Sanford, Greenfield, Ind..... | 75 |
| (3) No award. | |

Best peck bull nut hickory nuts—

- | | |
|---|------|
| (1) Evan Swift, Franklin, Ind..... | 1 00 |
| (2) F. M. Sanford, Greenfield, Ind..... | 75 |
| (3) No award. | |

Best peck black walnuts—	
(1) H. M. Stout, Trafalgar, Ind.....	1 00
(2) F. M. Sanford, Greenfield, Ind.....	75
(3) No award.	
Best peck butternuts—	
(1) F. M. Sanford, Greenfield, Ind.....	1 00
(2) No award.	
(3) No award.	
Best gallon chestnuts—	
(1) No award.	
(2) No award.	
(3) No award.	
Best gallon hazelnuts—	
(1) No award.	
(2) No award.	
(3) No award.	
Best gallon chinquapin acorns—	
(1) No award.	
(2) No award.	
(3) No award.	
Best gallon burr oak acorns—	
(1) F. M. Sanford, Greenfield, Ind.....	1 00
(2) No award.	
(3) No award.	
Best gallon pecan nuts—	
(1) No award.	
(2) No award.	
(3) No award.	
Best gallon cranberries—	
(1) No award.	
(2) No award.	
(3) No award.	
Best half peck pawpaws—	
(1) F. M. Sanford, Greenfield, Ind.....	1 00
(2) H. M. Stout, Trafalgar, Ind.....	75
(3) John G. Hitz, Madison, Ind.....	50
Best collection persimmons, not less than three kinds—	
(1) No award.	
(2) No award.	
(3) No award.	

FLOWERS.

CLASS LVI—PLANTS.

(George C. Stelhorn, Indianapolis, Ind., Judge.)

Ten palms—	
(1) E. A. Nelson, Indianapolis, Ind.....	\$ 10 00
(2) John Rieman, Indianapolis, Ind.....	8 00
Twenty ferns and lycopodiums—	
(1) E. A. Nelson, Indianapolis.....	15 00
(2) No award.	
Two specimens of sprengreii—	
(1) John Rieman, Indianapolis, Ind.....	6 00
(2) Baur & Smith, Indianapolis, Ind.....	4 00
Twenty variegated show plants—	
(1) E. A. Nelson, Indianapolis, Ind.....	10 00
(2) No award.	
Ten blooming begonias—	
(1) E. A. Nelson, Indianapolis, Ind.....	6 00
(2) No award.	
Ten foliage begonias—	
(1) Baur & Smith, Indianapolis, Ind.....	7 00
(2) Silas Rothermel, Indianapolis, Ind.....	4 00
Two vases filled, either iron, rustic or wire—	
(1) E. A. Nelson, Indianapolis, Ind.....	6 00
(2) John Rieman, Indianapolis, Ind.....	4 00
Best arrangement of plants and fancy basket—	
(1) E. A. Nelson, Indianapolis, Ind.....	10 00
(2) No award.	
Display and arrangement of show plants—	
(1) E. A. Nelson, Indianapolis, Ind.....	35 00
(2) Baur & Smith, Indianapolis, Ind.....	25 00
Two floral arrangements—	
(1) John Rieman, Indianapolis, Ind.....	25 00
(2) E. A. Nelson, Indianapolis, Ind.....	15 00
Two baskets—	
(1) John Rieman, Indianapolis, Ind.....	15 00
(2) E. A. Nelson, Indianapolis, Ind.....	10 00
Collection cut roses—	
(1) W. W. Coles, Kokomo, Ind.....	15 00
(2) E. A. Nelson, Indianapolis, Ind.....	10 00
Collection cut flowers—	
(1) E. A. Nelson, Indianapolis, Ind.....	15 00
(2) W. W. Coles, Kokomo, Ind.....	10 00

Collection dahlias—

(1) John Rieman, Indianapolis, Ind.....	10 00
(2) W. W. Coles, Kokomo, Ind.....	5 00

Collection of cut gladioli—

(1) John Rieman, Indianapolis, Ind.....	15 00
(2) W. W. Coles, Kokomo, Ind.....	10 00
(3) E. A. Nelson, Indianapolis, Ind.....	5 00

Original show arrangement of flowers—

(1) John Rieman, Indianapolis, Ind.....	50 00
(2) E. A. Nelson, Indianapolis, Ind.....	35 00
(3) No award.	

Three bouquets—

(1) John Rieman, Indianapolis, Ind.....	12 00
(2) W. W. Coles, Kokomo, Ind.....	8 00
(3) E. A. Nelson, Indianapolis, Ind.....	4 00

CLASS LVII—AMATEUR.

Collection of begonias—

(1) Mrs. Frank P. Johnson, Indianapolis, Ind.....	\$ 4 00
(2) Mrs. Mary E. Sullivan, Indianapolis, Ind.....	2 00

Collection foliage plants—

(1) Mrs. Mary E. Sullivan, Indianapolis, Ind.....	3 00
(2) Mrs. W. B. Flick, Lawrence, Ind.....	1 50

Collection climbing and trailing plants—

(1) Mrs. Mary E. Sullivan, Indianapolis, Ind.....	3 00
(2) Mrs. W. B. Flick, Lawrence, Ind.....	1 50

Specimen of geraniums—

(1) Mrs. Mary E. Sullivan, Indianapolis, Ind.....	2 00
(2) Paul Kempe, Indianapolis, Ind.....	1 00

CUT FLOWERS.

Collection geraniums—

(1) A. R. Edmunds, Indianapolis, Ind.....	3 00
(2) Mrs. Mary E. Sullivan, Indianapolis, Ind.....	2 00

Collection of cut flowers—

(1) Paul Kempe, Indianapolis, Ind.....	1 00
(2) A. R. Edmunds, Indianapolis, Ind.....	2 00

Collection verbenas—

(1) Mrs. W. B. Flick, Lawrence, Ind.....	2 00
(2) Paul Kempe, Indianapolis, Ind.....	1 00

Collection dahlias—

(1) Paul Kempe, Indianapolis, Ind.....	3 00
(2) Mrs. Jennie Droke, Southport, Ind.....	2 00

Collection gladiolus—

(1) Paul Kempe, Indianapolis, Ind.....	3 00
(2) A. R. Edmunds, Indianapolis, Ind.....	2 00

Collection cannas—

(1) Paul Kempe, Indianapolis, Ind.....	3 00
(2) A. R. Edmunds, Indianapolis, Ind.....	2 00

Twelve carnations—

(1) A. R. Edmunds, Indianapolis, Ind.....	3 00
(2) Paul Kempe, Indianapolis, Ind.....	2 00

Two bouquets of garden flowers—

(1) Paul Kempe, Indianapolis, Ind.....	4 00
(2) A. R. Edmunds, Indianapolis, Ind.....	2 00

CLASS LVIII—BEES AND HONEY.

(J. C. Kimmell, Ligonier, Ind., Judge.)

Best display of bees, honey, apiary products, supplies and appliances—

(1) George M. Rumler, Mohawk, Ind.....	\$ 25 00
(2) George M. Rumler, Mohawk, Ind.....	15 00
(3) H. M. Smith, Mooresville, Ind.....	10 00

CLASS LIX—TABLE LUXURIES.

(May C. Hitchcock, Brimfield, Ind., Judge.)

Home-made cheese—

(1) Mrs. M. E. Myers, Cambridge City, Ind.....	\$ 1 50
(2) Mrs. James A. Norwood, Southport, Ind.....	75

Fancy cheese—

(1) Mrs. J. B. Powers, Indianapolis, Ind.....	1 50
(2) Mrs. Jennie Droke, Southport, Ind.....	75

Maple syrup in most marketable shape—

(1) Mrs. M. E. Myers, Cambridge City, Ind.....	2 00
(2) Mrs. E. T. Drake, Edinburg, Ind.....	1 00

Maple sugar—

(1) Mrs. E. B. Bryson, Broad Ripple, Ind.....	2 00
(2) George M. Rumler, Mohawk, Ind.....	1 00

Bread, wheat, yeast—

(1) Mrs. W. S. Hoss, Indianapolis, Ind.....	1 50
(2) Mrs. J. M. Smock, Southport, Ind.....	75

Bread, wheat, salt rising—

(1) Mrs. E. T. Drake, Edinburg, Ind.....	1 50
(2) Mrs. I. M. Porter, Indianapolis, Ind.....	75

Graham bread, yeast—	
(1) Mrs. N. A. Ford, Indianapolis, Ind.	1 50
(2) Mrs. J. B. Powers, Indianapolis, Ind.	75
Boston Brown bread—	
(1) Mrs. W. B. Flick, Lawrence, Ind.	1 50
(2) Mrs. W. S. Hoss, Indianapolis, Ind.	75
Whole wheat bread—	
(1) Lina R. Marks, Indianapolis, Ind.	1 50
(2) Mrs. F. C. Stewart, Indianapolis, Ind.	75
Corn gems—	
(1) Mrs. William H. Welch, Indianapolis, Ind.	1 50
(2) Mrs. E. B. Bryson, Broad Ripple, Ind.	75
Dozen rolls—	
(1) Mrs. N. A. Ford, Indianapolis, Ind.	1 50
(2) Lina R. Marks, Indianapolis, Ind.	75
Ginger bread—	
(1) Mrs. F. C. Wood, Indianapolis, Ind.	1 50
(2) Mrs. W. S. Hoss, Indianapolis, Ind.	75
Ginger cookies—	
(1) Mrs. W. S. Hoss, Indianapolis, Ind.	1 00
(2) Mrs. E. B. Bryson, Broad Ripple, Ind.	50
Fig cake—	
(1) Mrs. W. B. Flick, Lawrence, Ind.	1 50
(2) Mrs. Jerome Dunlap, Lafayette, Ind.	75
Layer cake, caramel, orange—	
(1) Mrs. J. M. Smock, Southport, Ind.	1 50
(2) Mrs. Jerome Dunlap, Lafayette, Ind.	75
Layer cake, caramel, chocolate—	
(1) Mrs. J. M. Smock, Southport, Ind.	1 75
(2) Mrs. James A. Norwood, Southport, Ind.	75
Marble loaf cake—	
(1) Mrs. James A. Norwood, Southport, Ind.	1 50
(2) Mrs. J. M. Smock, Southport, Ind.	75
White Mountain cake—	
(1) Mrs. J. M. Smock, Southport, Ind.	1 50
(2) Mrs. James A. Norwood, Southport, Ind.	75
Cocoanut cake—	
(1) Mrs. J. M. Smock, Southport, Ind.	1 50
(2) Mrs. Jerome Dunlap, Lafayette, Ind.	75
Sunshine cake—	
(1) Mrs. J. M. Smock, Southport, Ind.	1 50
(2) Mrs. Jerome Dunlap, Lafayette, Ind.	75
Angel's food—	
(1) Mrs. L. K. Brown, Indianapolis, Ind.	1 50
(2) Mrs. William H. Welch, Indianapolis, Ind.	75

Hickory nut loaf cake—	
(1) Mrs. J. M. Smock, Southport, Ind.....	1 50
(2) Mrs. Jerome Dunlap, Lafayette, Ind.....	75
Hickory nut layer cake—	
(1) Mrs. F. C. Wood, Indianapolis, Ind.....	1 50
(2) Mrs. Jerome Dunlap, Lafayette, Ind.....	75
Fruit cake—	
(1) Mrs. I. M. Porter, Indianapolis, Ind.....	3 00
(2) Mrs. F. C. Stewart, Indianapolis, Ind.....	2 00
White fruit cake—	
(1) Mrs. J. M. Smock, Southport, Ind.....	1 50
(2) Mrs. Jerome Dunlap, Lafayette, Ind.....	75
White cake—	
(1) Mrs. J. M. Smock, Southport, Ind.....	1 50
(2) Mrs. Jerome Dunlap, Lafayette, Ind.....	75
Chocolate cake, layer—	
(1) Mrs. J. M. Smock, Southport, Ind.....	1 50
(2) Mrs. W. B. Flick, Lawrence, Ind.....	75
Chocolate cake, loaf—	
(1) Mrs. James A. Norwood, Southport, Ind.....	1 50
(2) Mrs. J. M. Smock, Southport, Ind.....	75
Crullers—	
(1) Mrs. James A. Norwood, Southport, Ind.....	1 50
(2) Mrs. I. M. Porter, Indianapolis.....	75
Cookies—	
(1) Mrs. Jennie Droke, Southport, Ind.....	1 50
(2) Mrs. W. B. Flick, Lawrence, Ind.....	75
Kisses—	
(1) Mrs. I. M. Porter, Indianapolis, Ind.....	1 50
(2) Mrs. N. A. Ford, Indianapolis, Ind.....	75
Maringues—	
(1) Mrs. N. A. Ford, Indianapolis, Ind.....	1 50
(2) Mrs. E. B. Bryson, Broad Ripple, Ind.....	75
Cheese straws—	
(1) Mrs. W. B. Flick, Lawrence, Ind.....	1 00
(2) Mrs. N. A. Ford, Indianapolis, Ind.....	50
Apple pie—	
(1) Mrs. F. C. Stewart, Indianapolis, Ind.....	1 00
(2) Mrs. Jennie Droke, Southport, Ind.....	50
Peach pie—	
(1) Mrs. N. A. Ford, Indianapolis, Ind.....	1 00
(2) Mrs. Jennie Droke, Southport, Ind.....	50
Lemon pie—	
(1) Lina R. Marks, Indianapolis, Ind.....	1 00
(2) Mrs. F. C. Stewart, Indianapolis, Ind.....	50

Sugar pie—	
(1) Mrs. N. A. Ford, Indianapolis, Ind.....	1 00
(2) Mrs. W. S. Hoss, Indianapolis, Ind.....	50
Pumpkin pie—	
(1) Mrs. W. S. Hoss, Indianapolis, Ind.....	1 05
(2) Mrs. William H. Welch, Indianapolis, Ind.....	50
Cherry pie—	
(1) Mrs. William H. Welch, Indianapolis, Ind.....	1 00
(2) Mrs. W. S. Hoss, Indianapolis, Ind.....	50
Plum pie—	
(1) Mrs. E. B. Bryson, Broad Ripple, Ind.....	1 00
(2) Mrs. W. S. Hoss, Indianapolis, Ind.....	50
Saratoga chips—	
(1) Mrs. J. B. Powers, Indianapolis, Ind.....	1 00
(2) Mrs. F. G. Wood, Indianapolis, Ind.....	50
Spiced peaches—	
(1) Mrs. Jennie Droke, Southport, Ind.....	1 00
(2) Mrs. F. C. Stewart, Indianapolis, Ind.....	50
Spiced pears—	
(1) Mrs. Jennie H. Droke, Southport, Ind.....	1 00
(2) Mrs. F. G. Wood, Indianapolis, Ind.....	50
Spiced cherries—	
(1) Mrs. W. B. Flick, Lawrence, Ind.....	1 00
(2) H. M. South, Trafalgar, Ind.....	50
Sweet pickles, collection—	
(1) Mrs. M. E. Myers, Cambridge City, Ind.....	4 00
(2) Mrs. Jennie Droke, Southport, Ind.....	2 00
Pickles, mixed—	
(1) Lina R. Marks, Indianapolis, Ind.....	1 00
(2) Mrs. Jennie Droke, Southport, Ind.....	50
Pickles, cucumber—	
(1) Mrs. F. C. Stewart, Indianapolis, Ind.....	1 50
(2) Mrs. I. M. Porter, Indianapolis, Ind.....	75
Peach pickles—	
(1) Mrs. W. B. Flick, Lawrence, Ind.....	1 50
(2) Mrs. F. G. Wood, Indianapolis, Ind.....	75
Pear pickles—	
(1) Mrs. F. G. Wood, Indianapolis, Ind.....	1 50
(2) H. M. Stout, Trafalgar, Ind.....	75
Tomato catsup—	
(1) Mrs. W. B. Flick, Lawrence, Ind.....	1 00
(2) Mrs. James A. Norwood, Southport, Ind.....	50
Cucumber catsup—	
(1) Mrs. W. B. Flick, Lawrence, Ind.....	1 00
(2) Mrs. M. E. Myers, Cambridge City, Ind.....	50

Chili sauce—	
(1) Mrs. I. M. Porter, Indianapolis, Ind.....	1 00
(2) Mrs. W. B. Flick, Lawrence, Ind.....	50
Boston baked beans—	
(1) Mrs. W. B. Flick, Lawrence, Ind.....	1 00
(2) Mrs. F. G. Wood, Indianapolis, Ind.....	50
Collection French candies, home-made—	
(1) Mrs. E. B. Bryson, Broad Ripple, Ind.....	1 50
(2) No award.	
Jellies, collection—	
(1) Mrs. M. E. Myers, Cambridge City, Ind.....	3 00
(2) Mrs. Jennie Droke, Southport, Ind.....	2 00
Preserves, collection—	
(1) Mrs. M. E. Myers, Cambridge City, Ind.....	3 00
(2) Mrs. Jennie Droke, Southport, Ind.....	2 00
Fruit butters, collection—	
(1) Mrs. M. E. Myers, Cambridge City, Ind.....	4 00
(2) Mrs. Jennie Droke, Southport, Ind.....	2 00
Canned fruit, collection—	
(1) Mrs. M. E. Myers, Cambridge City, Ind.....	6 00
(2) Mrs. Jennie Droke, Southport, Ind.....	4 00

PROFESSIONAL COOKING.

Best collection of cakes, three or more kinds—	
(1) Mrs. J. M. Smock, Southport, Ind.....	2 50
(2) Mrs. F. G. Wood, Indianapolis, Ind.....	1 25
Best collection of candies, five or more kinds—	
(1) Mrs. J. B. Powers, Indianapolis, Ind.....	2 00
(2) Mrs. N. A. Ford, Indianapolis, Ind.....	1 00
Fanciest gelatine dessert—	
(1) Mrs. J. B. Powers, Indianapolis, Ind.....	2 00
(2) Lina R. Marks, Indianapolis, Ind.....	1 00
Fancy bread for evening refreshments—	
(1) Mrs. L. K. Brown, Indianapolis, Ind.....	1 50
(2) Mrs. J. B. Powers, Indianapolis, Ind.....	75
Fancy dessert for evening refreshments—	
(1) Mrs. L. K. Brown, Indianapolis, Ind.....	1 00
(2) Lina R. Marks, Indianapolis, Ind.....	50
Fancy relish for evening refreshments—	
(1) Mrs. N. A. Ford, Indianapolis, Ind.....	1 00
(2) Mrs. L. K. Brown, Indianapolis, Ind.....	50

ART.

CLASS LX—KNITTING AND CROCHET WORK.

(Margaret J. Craighead, Muncie, Ind., Judge.)

Infant's shirt—	
(1) Mrs. C. W. Vance, Paris, Ill.....	\$ 1 00
(2) Mrs. John Hettich, Bowling Green, Mo.....	75
Infant's socks, display—	
(1) Mrs. Kate Rudolph, Cincinnati, Ohio.....	1 00
(2) Mrs. C. Dille, Greensburg, Ind.....	75
Pair silk mittens, hand-knit—	
(1) Mrs. C. W. Vance, Paris, Ill.....	1 50
(2) Mrs. C. C. Burns, Greensburg, Ind.....	75
Pair silk stockings, hand-knit—	
(1) Mrs. C. C. Burns, Greensburg, Ind.....	2 00
(2) No award.	
Infant's crochet sack—	
(1) Mrs. Minnie Zisiner, Indianapolis, Ind.....	1 00
(2) Mrs. Kate Rudolph, Cincinnati, Ohio.....	75
Couch cover—	
(1) Mrs. R. H. Talbutt, Lexington, Ky.....	2 00
(2) Mrs. C. C. Burns, Greensburg, Ind.....	1 00
Crochet skirt—	
(1) Mrs. C. W. Vance, Paris, Ill.....	2 00
(2) Mrs. C. Dille, Greensburg, Ind.....	1 00
Silk purse—	
(1) Mrs. C. W. Vance, Paris, Ill.....	1 00
(2) A. L. Orndorff, Indianapolis, Ind.....	50
Infant's cap—	
(1) Mrs. Kate Rudolph, Cincinnati, Ohio.....	1 50
(2) Mrs. C. Dille, Greensburg, Ind.....	75
Ladies' shawl, knit—	
(1) Mrs. C. C. Burns, Greensburg, Ind.....	1 50
(2) Mrs. R. H. Talbutt, Lexington, Ky.....	75
Ladies' shawl, crochet—	
(1) Mrs. John Hettich, Bowling Green, Mo.....	1 50
(2) Mrs. C. W. Vance, Paris, Ill.....	75
Crochet slippers—	
(1) Mrs. Kate Rudolph, Cincinnati, Ohio.....	1 50
(2) Mrs. R. H. Talbutt, Lexington, Ky.....	75

CLASS LXI—LACE, HAND MADE.

(Margaret J. Craighead, Muncie, Ind., Judge.)

Lace, Battenburg—	
(1) Mrs. C. C. Burns, Greensburg, Ind.....	\$ 1 50
(2) Mrs. C. W. Vance, Paris, Ill.....	1 00
Lace, point—	
(1) Fannie Miner, Indianapolis, Ind.....	2 00
(2) Mrs. C. W. Vance, Paris, Ill.....	1 00
Lace, Duchess—	
(1) Flora V. Greenstreet, Indianapolis, Ind.....	1 50
(2) Mrs. L. A. Moore, Terre Haute, Ind.....	1 00
Lace, Honiton—	
(1) Mrs. C. Dille, Greensburg, Ind.....	1 50
(2) Mrs. C. W. Vance, Paris, Ill.....	1 00
Lace, Flemish—	
(1) Mrs. Kate Rudolph, Cincinnati, Ohio.....	1 50
(2) Mrs. Kate Rudolph, Cincinnati, Ohio.....	1 00
Lace, Burges—	
(1) Mrs. Kate Rudolph, Cincinnati, Ohio.....	1 50
(2) Mrs. Kate Rudolph, Cincinnati, Ohio.....	1 00
Lace, applique—	
(1) Fannie Miner, Indianapolis, Ind.....	1 50
(2) Mrs. C. Dille, Greensburg, Ind.....	1 00
Lace dresser scarf—	
(1) Mrs. L. A. Moore, Terre Haute, Ind.....	1 50
(2) Mrs. C. W. Vance, Paris, Ill.....	1 00
Lace table cover—	
(1) Mrs. L. A. Moore, Terre Haute, Ind.....	1 50
(2) Mrs. C. Dille, Greensburg, Ind.....	1 00
Lace center piece—	
(1) Mrs. Kate Rudolph, Cincinnati, Ohio.....	1 00
(2) Bertha Hohl, Indianapolis, Ind.....	75
Lace sideboard scarf—	
(1) Mrs. C. C. Burns, Greensburg, Ind.....	1 00
(2) No award.	
Lace collar—	
(1) Mrs. C. B. Nicols, Muskegon, Mich.....	1 50
(2) Mrs. C. W. Vance, Paris, Ill.....	1 00
Lace handkerchief—	
(1) Mrs. L. A. Moore, Terre Haute, Ind.....	1 00
(2) Mrs. Kate Rudolph, Cincinnati, Ohio.....	75
Best article not mentioned in this class—	
(1) Mrs. C. Dille, Greensburg, Ind.....	1 50
(2) Mrs. C. C. Burns, Greensburg, Ind.....	1 00

Best display laces—

- (1) No award.
- (2) No award.

CLASS LXII—EMBROIDERY, HAND MADE.

(Margaret J. Craighead, Muncie, Ind., Judge.)

Delft—

- | | |
|---|---------|
| (1) Mrs. C. B. Nicols, Muskegon, Mich..... | \$ 2 00 |
| (2) Mrs. L. A. Moore, Terre Haute, Ind..... | 1 00 |

Jewel—

- | | |
|--|------|
| (1) Mrs. Dr. T. J. Behrens, Indianapolis, Ind..... | 2 00 |
| (2) Mrs. L. A. Moore, Terre Haute, Ind..... | 1 00 |

Iridescent—

- | | |
|--|------|
| (1) Mrs. C. B. Nicols, Muskegon, Mich..... | 2 00 |
| (2) Mrs. C. C. Burns, Greensburg, Ind..... | 1 00 |

Cotton—

- | | |
|---|------|
| (1) Mrs. C. Dille, Greensburg, Ind..... | 2 00 |
| (2) Mrs. C. W. Vance, Paris, Ill..... | 1 00 |

Kensington—

- | | |
|--|------|
| (1) Mrs. C. W. Vance, Paris, Ill..... | 2 00 |
| (2) Mrs. R. H. Talbutt, Lexington, Ky..... | 1 00 |

Arabian—

- (1) No award.
- (2) No award.

Marie Antoinette—

- (1) No award.
- (2) No award.

Rococo—

- | | |
|---|------|
| (1) Mrs. C. W. Vance, Paris, Ill..... | 2 00 |
| (2) Mrs. L. A. Moore, Terre Haute, Ind..... | 1 00 |

Mount Melich—

- | | |
|---|------|
| (1) Mrs. R. H. Talbutt, Lexington, Ky..... | 2 00 |
| (2) Mrs. L. A. Moore, Terre Haute, Ind..... | 1 00 |

Tappissery or flat stitch—

- | | |
|---|------|
| (1) Mrs. Minnie Zisiner, Indianapolis, Ind..... | 2 00 |
| (2) Mrs. Kate Rudolph, Cincinnati, Ohio..... | 1 00 |

Rope silk—

- | | |
|--|------|
| (1) Mrs. Kate Rudolph, Cincinnati, Ohio..... | 2 00 |
| (2) Mrs. C. W. Vance, Paris, Ill..... | 1 00 |

Roman—

- | | |
|---|------|
| (1) Mrs. C. C. Burns, Greensburg, Ind..... | 2 00 |
| (2) Mrs. L. A. Moore, Terre Haute, Ind..... | 1 00 |

Embroidery on bolting cloth—

- (1) No award.
- (2) No award.

Embroidery on chamois—

- (1) Mrs. Mary R. Garver, Indianapolis, Ind. 2 00
- (2) A. L. Orndorff, Indianapolis, Ind. 1 00

Queen Anne darning—

- (1) No award.
- (2) No award.

Decore—

- (1) Mrs. Kate Rudolph, Cincinnati, Ohio. 1 50
- (2) Mrs. C. W. Vance, Paris, Ill. 75

Lunch set—

- (1) Mrs. R. H. Talbutt, Lexington, Ky. 2 00
- (2) Mrs. C. Dille, Greensburg, Ind. 1 00

Doily set—

- (1) Mrs. Kate Rudolph, Cincinnati, Ohio. 2 00
- (2) Mrs. R. H. Talbutt, Lexington, Ky. 1 00

Linen table cloth and six napkins—

- (1) Mrs. C. Dille, Greensburg, Ind. 3 00
- (2) Mrs. L. A. Moore, Terre Haute, Ind. 1 50

Hostess cloth—

- (1) Mrs. C. W. Vance, Paris, Ill. 2 00
- (2) Mrs. C. Dille, Greensburg, Ind. 1 00

Tray cloth—

- (1) Mrs. Kate Rudolph, Cincinnati, Ohio. 1 50
- (2) Mrs. R. H. Talbutt, Lexington, Ky. 75

Skirt, silk embroidery—

- (1) Mrs. C. Dille, Greensburg, Ind. 2 00
- (2) Mrs. C. B. Nicols, Muskegon, Mich. 1 00

Infant's shawl, silk embroidery—

- (1) No award.
- (2) No award.

Infant's cap, silk embroidery—

- (1) Mrs. C. Dille, Greensburg, Ind. 1 50
- (2) No award.

Sideboard scarf—

- (1) Mrs. C. W. Vance, Paris, Ill. 2 00
- (2) Mrs. C. Dille, Greensburg, Ind. 1 00

Dresser furnishings, four pieces—

- (1) Mrs. C. W. Vance, Paris, Ill. 2 00
- (2) Mrs. L. A. Moore, Terre Haute, Ind. 1 00

Couch pillow—

- (1) Mrs. C. W. Vance, Paris, Ill. 2 00
- (2) Walter E. Ervin, New Augusta, Ind. 1 00

Toilet cushion, new style—	
(1) Mrs. Kate Rudolph, Cincinnati, Ohio.....	2 00
(2) Mrs. F. C. Stewart, Indianapolis, Ind.....	1 00
Table cover—	
(1) Mrs. Kate Rudolph, Cincinnati, Ohio.....	3 00
(2) Mrs. C. C. Burns, Greensburg, Ind.....	2 00
Table center, embroidered—	
(1) Jennie Francis, Indianapolis, Ind.....	2 00
(2) Mrs. John Hettich, Bowling Green, Mo.....	1 00
Picture frame—	
(1) Mrs. C. W. Vance, Paris, Ill.....	1 50
(2) Mrs. Dr. T. J. Behrens, Indianapolis, Ind.....	75
Bulgarian work—	
(1) Mrs. C. Dille, Greensburg, Ind.....	1 50
(2) Mrs. C. C. Burns, Greensburg, Ind.....	75
College pillow—	
(1) No award.	
(2) No award.	
Best specimen not mentioned in this class—	
(1) Mrs. C. W. Vance, Paris, Ill.....	1 50
(2) Jennie Francis, Indianapolis, Ind.....	1 00

CLASS LXIII—SEWING—MACHINE AND HAND.

(Margaret J. Craighead, Muncie, Ind., Judge.)

MACHINE WORK.

Display of ladies' underwear—	
(1) Mrs. C. Dille, Greensburg, Ind.....	\$ 2 00
(2) Mrs. Hulda Field, Greensburg, Ind.....	1 00
Hemstitching, machine—	
(1) Mrs. C. W. Vance, Paris, Ill.....	1 50
(2) Mrs. C. B. Nicols, Muskegon, Mich.....	75
Best of any article—	
(1) Mrs. Kate Rudolph, Cincinnati, Ohio.....	2 00
(2) Mrs. C. W. Vance, Paris, Ill.....	1 00

HAND WORK.

Hemstitching, specimen—	
(1) Mrs. C. Dille, Greensburg, Ind.....	2 00
(2) Mrs. C. W. Vance, Paris, Ill.....	1 00
Hemstitching, silk, not handkerchief—	
(1) Mrs. William H. Welch, Indianapolis, Ind.....	2 00
(2) No award.	

Hemstitching, linen, not handkerchief—

- (1) Mrs. Dr. T. J. Behrens, Indianapolis, Ind. 2 00
 (2) Mrs. C. Dille, Greensburg, Ind. 1 00

Drawn work, Mexican—

- (1) Mrs. Kate Rudolph, Cincinnati, Ohio. 2 00
 (2) Mrs. William H. Welch, Indianapolis, Ind. 1 00

Infant's outfit, complete, most sensible and neat—

- (1) Mrs. C. Dille, Greensburg, Ind. 1 50
 (2) Mrs. Hulda Field, Greensburg, Ind. 1 50

CLASS LXIV—LADIES' FANCY WORK.

(Margaret J. Craighead, Muncie, Ind., Judge.)

Couch pillow, most sensible—

- (1) Mrs. C. W. Batch, Lafayette, Ind. \$ 1 50
 (2) Mrs. F. C. Stewart, Indianapolis, Ind. 75

Book cover, linen—

- (1) Mrs. Kate Rudolph, Cincinnati, Ohio. 1 50
 (2) Mrs. C. W. Vance, Paris, Ill. 75

Lunch set—

- (1) Mrs. R. H. Talbutt, Lexington, Ky. 2 00
 (2) Mrs. C. W. Vance, Paris, Ill. 1 00

Doilies, not embroidered—

- (1) Mrs. C. W. Batch, Lafayette, Ind. 1 50
 (2) Mrs. C. Dille, Greensburg, Ind. 75

Fancy apron—

- (1) Mrs. C. Dille, Greensburg, Ind. 1 50
 (2) Mrs. Kate Rudolph, Cincinnati, Ohio. 75

Kitchen apron, most practical—

- (1) Mrs. Kate Rudolph, Cincinnati, Ohio. 1 50
 (2) Mrs. C. W. Vance, Paris, Ill. 75

Table cover, not embroidered—

- (1) Mrs. C. C. Burns, Greensburg, Ind. 1 50
 (2) P. C. Shoemaker, Lebanon, Ind. 75

Table center, not embroidered—

- (1) Mrs. Kate Rudolph, Cincinnati, Ohio. 1 50
 (2) Mrs. R. H. Talbutt, Lexington, Ky. 75

Fancy opera bag—

- (1) Mrs. C. W. Vance, Paris, Ill. 1 50
 (2) A. L. Orndorff, Indianapolis, Ind. 75

Laundry bag—

- (1) Mrs. F. G. Wood, Indianapolis, Ind. 1 50
 (2) Mrs. Kate Rudolph, Cincinnati, Ohio. 75

Quilt, silk, needlework—

- | | |
|--|------|
| (1) Mrs. Kate Rudolph, Cincinnati, Ohio..... | 3 00 |
| (2) Mrs. C. W. Batch, Lafayette, Ind..... | 2 00 |

Patch work quilt—

- | | |
|--|------|
| (1) A. C. Sedam, Indianapolis, Ind..... | 2 00 |
| (2) Jennie Francis, Indianapolis, Ind..... | 1 00 |

CLASS LXV—FOR AMATEURS EXCLUSIVELY.

(Margaret J. Craighead, Muncie, Ind., Judge.)

Best display pictures $3\frac{1}{2} \times 3\frac{1}{2}$ —

- | | |
|--|---------|
| (1) Nellie Coutant, Crawfordsville, Ind..... | \$ 3 00 |
| (2) Ben W. Douglass, Indianapolis, Ind..... | 1 50 |

Best display pictures $3\frac{1}{4} \times 4\frac{1}{4}$ —

- | | |
|--|------|
| (1) Ben W. Douglass, Indianapolis, Ind..... | 3 00 |
| (2) Nellie Coutant, Crawfordsville, Ind..... | 1 50 |

Best display pictures $4\frac{1}{2} \times 5$ —

- | | |
|--|------|
| (1) Ben W. Douglass, Indianapolis, Ind..... | 3 00 |
| (2) Nellie Coutant, Crawfordsville, Ind..... | 1 50 |

Best display pictures $4\frac{1}{4} \times 4\frac{1}{4}$ —

- | | |
|--|------|
| (1) Ben W. Douglass, Indianapolis, Ind..... | 3 00 |
| (2) Nellie Coutant, Crawfordsville, Ind..... | 1 50 |

Best display pictures 5×7 —

- | | |
|--|------|
| (1) Mrs. C. W. Vance, Paris, Ill..... | 3 00 |
| (2) Nellie Coutant, Crawfordsville, Ind..... | 1 50 |

Best display pictures $6\frac{1}{2} \times 8\frac{1}{2}$ —

- | | |
|---|------|
| (1) Ben W. Douglass, Indianapolis, Ind..... | 3 00 |
|---|------|

CLASS LXVI—DECORATIVE ART WORK.

(Margaret J. Craighead, Muncie, Ind., Judge.)

Wood carving display—

- | | |
|--|---------|
| (1) Ella J. Murphy, Indianapolis, Ind..... | \$ 5 00 |
| (2) Mrs. G. E. Brittain, Dayton, Ohio..... | 2 50 |

Wood carving, specimen—

- | | |
|--|------|
| (1) Ella J. Murphy, Indianapolis, Ind..... | 2 00 |
| (2) Walter E. Ervin, New Augusta, Ind..... | 1 00 |

Tapestry painting—

- | | |
|---|------|
| (1) Mrs. William H. Welch, Indianapolis, Ind..... | 5 00 |
| (2) Helen M. Goodwin, New Castle, Ind..... | 2 50 |

Pyrography specimen, leather—

- | | |
|--|------|
| (1) A. L. Orendoff, Indianapolis, Ind..... | 2 00 |
| (2) No award. | |

Pyrography specimen, wood—	
(1) Mrs. Minnie Wilcox, Indianapolis, Ind.....	2 00
(2) Winifred Austin, Crawfordsville, Ind.....	1 00
Pyrography display—	
(1) Winifred Austin, Crawfordsville, Ind.....	3 00
(2) Mrs. C. W. Vance, Paris, Ill.....	1 50
Pyrography portrait from life—	
(1) Winifred Austin, Crawfordsville, Ind.....	2 00
(2) Winifred Austin, Crawfordsville, Ind.....	1 00
Pyrography Indian work—	
(1) A. L. Orndorff, Indianapolis, Ind.....	2 00
(2) Mrs. G. E. Brittain, Dayton, Ohio.....	1 00

CLASS LXVII—PAINTINGS AND DRAWINGS—AMATEUR.

(Adaline Cates, Muncie, Ind., Judge.)

Portrait in oil, from life—	
(1) Mrs. L. M. Buell, Beloit, Wis.....	5 00
(2) Albert Henley, Indianapolis, Ind.....	2 50
Portrait in crayon, from life—	
(1) Mrs. G. E. Brittain, Dayton, Ohio.....	2 00
(2) Edgar Harris, Troy, Ohio.....	1 00
Portrait in pastel, from life—	
(1) No award.	
(2) No award.	
Portrait in water colors, from life—	
(1) Winifred Austin, Crawfordsville, Ind.....	4 00
(2) Mrs. L. M. Buell, Beloit, Wis.....	2 00
Ideal head in oil—	
(1) Mrs. L. M. Buell, Beloit, Wis.....	2 00
(2) Albert Henley, Indianapolis, Ind.....	1 00
Ideal head in crayon—	
(1) Fannie H. Schoenhut, Marshalltown, Ia.....	2 00
(2) Mrs. G. E. Brittain, Dayton, Ohio.....	1 00
Ideal head in water colors—	
(1) Winifred Austin, Crawfordsville, Ind.....	2 00
(2) Fannie H. Schoenhut, Marshalltown, Ia.....	1 00
Ideal head in pastel—	
(1) Mrs. L. M. Buell, Beloit, Wis.....	2 00
(2) Fannie H. Schoenhut, Marshalltown, Ia.....	1 00
Group figure in oil—	
(1) Fannie H. Schoenhut, Marshalltown, Ia.....	3 00
(2) Mrs. L. M. Buell, Beloit, Wis.....	1 50

Ideal figure in crayon—	
(1) Fannie H. Schoenhut, Marshalltown, Ia.....	2 00
(2) Mrs. C. W. Vance, Paris, Ill.....	1 00
Group figure in water colors—	
(1) Winifred Austin, Crawfordsville, Ind.....	2 00
(2) Mrs. L. M. Buell, Beloit, Wis.....	1 00
Specimen, flowers in oil—	
(1) Fannie H. Schoenhut, Marshalltown, Ia.....	2 00
(2) Mrs. C. W. Vance, Paris, Ill.....	1 00
Display, flowers in oil—	
(1) No award.	
(2) No award.	
Specimen, flowers in water colors—	
(1) Fannie H. Schoenhut, Marshalltown, Ia.....	2 00
(2) Edgar Harris, Troy, Ohio.....	1 00
Specimen, fruit in oil—	
(1) Mrs. L. M. Buell, Beloit, Wis.....	2 50
(2) Fannie H. Schoenhut, Marshalltown, Ia.....	1 00
Specimen, fruit in water colors—	
(1) Fannie H. Schoenhut, Marshalltown, Ia.....	2 00
(2) Albert Henley, Indianapolis, Ind.....	1 00
Specimen, vegetable in oil—	
(1) Mrs. L. M. Buell, Beloit, Wis.....	2 00
(2) Fannie H. Schoenhut, Marshalltown, Ia.....	1 00
Specimen, vegetable in water colors—	
(1) Mrs. L. M. Buell, Beloit, Wis.....	2 00
(2) Albert Henley, Indianapolis, Ind.....	1 00
Display, fruit or vegetable in oil—	
(1) No award.	
(2) No award.	
Display, fruit or vegetable in water colors—	
(1) No award.	
(2) Mrs. G. E. Brittain, Dayton, Ohio.....	2 00
Specimen, animal in oil—	
(1) Fannie H. Schoenhut, Marshalltown, Ia.....	2 00
(2) Mrs. C. W. Vance, Paris, Ill.....	1 00
Specimen, animal in water colors—	
(1) Fannie H. Schoenhut, Marshalltown, Ia.....	2 00
(2) Mrs. C. W. Vance, Paris, Ill.....	1 00
Specimen, game in oil—	
(1) Daisy C. Altland, Indianapolis, Ind.....	2 00
(2) Fannie H. Schoenhut, Marshalltown, Ia.....	1 00
Specimen, game in water colors—	
(1) Edgar Harris, Troy, Ohio.....	2 00
(2) No award.	

Specimen, still life in oil—	
(1) Mrs. L. M. Buell, Beloit, Wis.....	2 00
(2) Albert Henley, Indianapolis, Ind.....	1 00
Specimen, still life in water colors—	
(1) Lena L. Ingraham, Indianapolis, Ind.....	2 00
(2) Mrs. L. M. Buell, Beloit, Wis.....	1 00
Specimen, landscape in oil—	
(1) Lena L. Ingraham, Indianapolis, Ind.....	2 00
(2) Mrs. G. E. Brittain, Dayton, Ohio.....	1 00
Specimen, landscape in water colors—	
(1) Fannie H. Schoenhut, Marshalltown, Ia.....	2 00
(2) Mrs. L. M. Buell, Beloit, Wis.....	1 00
Display landscape paintings—	
(1) Fannie H. Schoenhut, Marshalltown, Ia.....	7 00
(2) Edgar Harris, Troy, Ohio.....	3 50
Summer scene in oil—	
(1) Lena L. Ingraham, Indianapolis, Ind.....	2 00
(2) Fannie H. Schoenhut, Marshalltown, Ia.....	1 00
Summer scene in water colors—	
(1) Mrs. L. M. Buell, Beloit, Wis.....	2 00
(2) Fannie H. Schoenhut, Marshalltown, Ia.....	1 00
Autumn scene in oil—	
(1) Mrs. L. M. Buell, Beloit, Wis.....	2 00
(2) Lena L. Ingraham, Indianapolis, Ind.....	1 00
Autumn scene in water colors—	
(1) Fannie H. Schoenhut, Marshalltown, Ia.....	2 00
(2) Mrs. G. E. Brittain, Dayton, Ohio.....	1 00
Winter scene in oil—	
(1) Fannie H. Schoenhut, Marshalltown, Ia.....	2 00
(2) Mrs. L. M. Buell, Beloit, Wis.....	1 00
Winter scene in water colors—	
(1) Mrs. G. E. Brittain, Dayton, Ohio.....	2 00
(2) No award.	
Marine scene in oil—	
(1) Mrs. L. M. Buell, Beloit, Wis.....	2 00
(2) Edgar Harris, Troy, Ohio.....	1 00
Marine scene in water colors—	
(1) Fannie H. Schoenhut, Marshalltown, Ia.....	2 00
(2) Mrs. G. E. Brittain, Dayton, Ohio.....	1 00
Interior scene, oil—	
(1) Mrs. L. M. Buell, Beloit, Wis.....	2 00
(2) No award.	
Interior scene, water colors—	
(1) Winifred Austin, Crawfordsville, Ind.....	2 00
(2) Mrs. L. M. Buell, Beloit, Wis.....	1 00

Specimen, pencil drawing—	
(1) Winifred Austin, Crawfordsville, Ind.....	1 00
(2) Mrs. C. W. Vance, Paris, Ill.....	75
Specimen, pen and ink sketch—	
(1) Winifred Austin, Crawfordsville, Ind.....	1 00
(2) Edgar Harris, Troy, Ohio.....	75
Display, pen and ink sketch—	
(1) Winifred Austin, Crawfordsville, Ind.....	2 00
(2) Fannie H. Schoenhut, Marshalltown, Ia.....	1 00
Drawing, architectural, original—	
(1) No award.	
(2) No award.	
Drawing, mechanical—	
(1) Fannie H. Schoenhut, Marshalltown, Ia.....	2 00
Display, water colors—	
(1) Fannie H. Schoenhut, Marshalltown, Ia.....	4 00
(2) Mrs. L. M. Buell, Beloit, Wis.....	2 00
Best display in pastels—	
(1) Edgar Harris, Troy, Ohio.....	4 00
(2) Fannie H. Schoenhut, Marshalltown, Ia.....	2 00
Best entire exhibit paintings and drawings—	
(1) No award.	
(2) No award.	

CLASS LXVIII—PAINTINGS AND DRAWINGS.

(Adaline Cates, Muncie, Ind., Judge.)

Portrait in oil made in past two years—	
(1) Helen M. Goodwin, New Castle, Ind.....	\$ 10 00
(2) Helen M. Goodwin, New Castle, Ind.....	5 00
Portrait in water colors—	
(1) Mrs. J. N. Chamberlain, Beloit, Wis.....	10 00
(2) Ellen M. Ingraham, Indianapolis, Ind.....	5 00
Portrait in crayon—	
(1) Mrs. John O. Spahr, Indianapolis, Ind.....	6 00
(2) Henry Fenstermacher, Springfield, Ohio.....	3 00
Portrait in pastel—	
(1) Mrs. John O. Spahr, Indianapolis, Ind.....	6 00
(2) Henry Fenstermacher, Springfield, Ohio.....	3 00
Ideal head in oil—	
(1) Mrs. John O. Spahr, Indianapolis, Ind.....	6 00
(2) L. A. Wilson, Indianapolis, Ind.....	3 00
Ideal head in water colors—	
(1) Mrs. John O. Spahr, Indianapolis, Ind.....	4 00
(2) Mrs. C. F. Palmer, Indianapolis, Ind.....	2 00

Ideal figure in oil—

- (1) Louise S. Williams, Marshalltown, Ia. 5 00
 (2) Ellen M. Ingraham, Indianapolis, Ind. 2 50

Group figure in oil—

- (1) Henry Fenstermacher, Springfield, Ohio. 5 00
 (2) Mrs. John O. Spahr, Indianapolis, Ind. 2 50

Ideal figure in water colors—

- (1) Mrs. O. Pratt, Spring Prairie, Wis. 4 00
 (2) Mrs. W. R. Galpin, Indianapolis, Ind. 2 00

Group figure in water colors—

- (1) Mrs. John O. Spahr, Indianapolis, Ind. 4 00
 (2) L. M. Churbuck, Brockton, Mass. 2 00

Specimen flowers in oil—

- (1) Mrs. John O. Spahr, Indianapolis, Ind. 4 00
 (2) Mrs. C. F. Palmer, Indianapolis, Ind. 2 00

Display, flowers in oil—

- (1) Mrs. O. Pratt, Spring Prairie, Wis. 6 00
 (2) Henry Fenstermacher, Springfield, Ohio. 3 00

Specimen, flowers in water colors—

- (1) Louise Williams, Marshalltown, Ia. 4 00
 (2) Mrs. O. Pratt, Spring Prairie, Wis. 2 00

Display, flowers in water colors—

- (1) Mrs. C. F. Palmer, Indianapolis, Ind. 5 00
 (2) Mrs. J. N. Chamberlain, Beloit, Wis. 3 00

Specimen, fruit in oil—

- (1) Mrs. O. Pratt, Spring Prairie, Wis. 4 00
 (2) Mrs. John O. Spahr, Indianapolis, Ind. 2 00

Best original specimen—

- (1) Mrs. W. R. Galpin, Indianapolis, Ind. 4 00
 (2) Mrs. C. F. Palmer, Indianapolis, Ind. 2 00

Specimen, fruit in water colors—

- (1) Louise S. Williams, Marshalltown, Ia. 4 00
 (2) Helen M. Goodwin, New Castle, Ind. 2 00

Specimen, vegetable in oil—

- (1) Ellen M. Ingraham, Indianapolis, Ind. 4 00
 (2) Louise S. Williams, Marshalltown, Ia. 2 00

Specimen, vegetable in water colors—

- (1) Louise S. Williams, Marshalltown, Ia. 4 00
 (2) Helen M. Goodwin, New Castle, Ind. 2 00

Display fruit or vegetable in oil—

- (1) Mrs. O. Pratt, Spring Prairie, Wis. 5 00
 (2) Henry Fenstermacher, Springfield, Ohio. 2 50

Display fruit or vegetable in water colors—

- (1) Mrs. J. N. Chamberlain, Beloit, Wis. 5 00
 (2) Mrs. W. R. Galpin, Indianapolis, Ind. 3 00

Animal in oil—	
(1) Helen M. Goodwin, New Castle, Ind.....	4 00
(2) Henry Fenstermacher, Springfield, Ohio.....	2 00
Animal in water colors—	
(1) Ella J. Murphy, Indianapolis, Ind.....	4 00
(2) L. M. Churbuck, Brockton, Mass.....	2 00
Game in oil—	
(1) A. L. Orndorff, Indianapolis, Ind.....	4 00
(2) Mrs. O. Pratt, Spring Prairie, Wis.....	2 00
Game in water colors—	
(1) Mrs. W. R. Galpin, Indianapolis, Ind.....	4 00
(2) Louise S. Williams, Marshalltown, Ia.....	2 00
Still life in oil—	
(1) Helen M. Goodwin, New Castle, Ind.....	4 00
(2) L. A. Wilson, Indianapolis, Ind.....	2 00
Still life in water colors—	
(1) Louise S. Williams, Marshalltown, Ia.....	4 00
(2) Helen M. Goodwin, New Castle, Ind.....	2 00
Specimen, landscape in oil—	
(1) Mrs. C. F. Palmer, Indianapolis, Ind.....	4 00
(2) Helen M. Goodwin, New Castle, Ind.....	2 00
Specimen, landscape in water colors—	
(1) Ellen M. Ingraham, Indianapolis, Ind.....	4 00
(2) L. M. Churbuck, Brockton, Mass.....	2 00
Display landscape paintings—	
(1) L. M. Churbuck, Brockton, Mass.....	6 00
(2) Mrs. C. F. Palmer, Indianapolis, Ind.....	3 00
Interior scene in oil—	
(1) Helen M. Goodwin, New Castle, Ind.....	4 00
(2) Mrs. O. Pratt, Spring Prairie, Wis.....	2 00
Interior scene, water colors—	
(1) Mrs. W. R. Galpin, Indianapolis, Ind.....	4 00
(2) L. A. Wilson, Indianapolis, Ind.....	2 00
Drawing, from antique, head—	
(1) Mrs. John O. Spahr, Indianapolis, Ind.....	4 00
(2) Mrs. John O. Spahr, Indianapolis, Ind.....	2 00
Drawing, from antique, figure—	
(1) L. A. Wilson, Indianapolis, Ind.....	4 00
(2) Mrs. John O. Spahr, Indianapolis, Ind.....	2 00
Drawing, animal—	
(1) Helen M. Goodwin, New Castle, Ind.....	4 00
(2) Mrs. John O. Spahr, Indianapolis, Ind.....	2 00
Drawing, architectural—	
(1) Helen M. Goodwin, New Castle, Ind.....	4 00
(2) No award.	

Drawing, mechanical—	
(1) Henry Fenstermacher, Springfield, Ohio.....	4 00
(2) Louise Williams, Marshalltown, Ia.....	2 00
Pen and ink drawing—	
(1) Winifred Austin, Crawfordsville, Ind.....	2 00
(2) Mrs. W. R. Galpin, Indianapolis, Ind.....	1 00
Charcoal drawing from life—	
(1) Louise Williams, Marshalltown, Ia.....	3 00
(2) Albert Henley, Indianapolis, Ind.....	2 00
Best display of pastels—	
(1) Mrs. John O. Spahr, Indianapolis, Ind.....	4 00
(2) No award.	
Best display of crayons—	
(1) Helen M. Goodwin, New Castle, Ind.....	4 00
(2) No award.	
Best entire exhibit paintings and drawings—	
(1) Mrs. John O. Spahr, Indianapolis, Ind.....	10 00
(2) No award.	
Best display of water colors—	
(1) Helen M. Goodwin, New Castle, Ind.....	4 00
(2) Louise S. Williams, Marshalltown, Ia.....	2 00

CLASS LXIX—CHINA—AMATEUR.

(Mrs. Frank Collett Jones, Frankfort, Ind., Judge.)

Painting on china, Dresden, specimen—	
(1) Mrs. E. P. Thayer, Greenfield, Ind.....	2 00
(2) Mrs. Mary R. Garver, Indianapolis, Ind.....	1 00
Painting on china, Persian, specimen—	
(1) Mrs. Mary R. Garver, Indianapolis, Ind.....	2 00
(2) Flora V. Greenstreet, Indianapolis, Ind.....	1 00
Painting on china, relief work—	
(1) Mrs. Mary R. Garver, Indianapolis, Ind.....	2 00
(2) Flora V. Greenstreet, Indianapolis, Ind.....	1 00
Painting on china, enamel—	
(1) Flora V. Greenstreet, Indianapolis, Ind.....	2 00
(2) Mrs. Mary R. Garver, Indianapolis, Ind.....	1 00
Painting on china, colored gold—	
(1) Mrs. E. P. Thayer, Greenfield, Ind.....	2 00
(2) Flora V. Greenstreet, Indianapolis, Ind.....	1 00
Painting on china, lustre—	
(1) Mrs. Charles F. Kramer, Indianapolis, Ind.....	2 00
(2) Flora V. Greenstreet, Indianapolis, Ind.....	1 00
Painting on china, dusted tinting—	
(1) Mrs. Willis Fugate, Indianapolis, Ind.....	2 00
(2) Mrs. E. P. Thayer, Greenfield, Ind.....	1 00

Painting on china, punch bowl and cup, flowers—	
(1) Mrs. E. P. Thayer, Greenfield, Ind.....	4 00
(2) No award.	
Painting on china, punch bowl and cups, fruit—	
(1) Mrs. E. P. Thayer, Greenfield, Ind.....	4 00
(2) Mrs. Charles F. Kramer, Indianapolis, Ind.....	2 00
Painting on china, tankard and cups, flowers—	
(1) Mrs. F. E. Wolcott, Indianapolis, Ind.....	4 00
(2) Mrs. Willis Fugate, Indianapolis, Ind.....	2 00
Painting on china, tankard and cups, fruit—	
(1) Mrs. E. P. Thayer, Greenfield, Ind.....	4 00
(2) Miss Daisy C. Altland, Indianapolis, Ind.....	2 00
Painting on china, claret pitcher—	
(1) Mrs. E. P. Thayer, Greenfield, Ind.....	4 00
(2) Flora V. Greenstreet, Indianapolis, Ind.....	2 00
Painting on china, jardiniere—	
(1) Miss Stella Huntington, Cumberland, Ind.....	4 00
(2) Mrs. Charles F. Kramer, Indianapolis, Ind.....	2 00
Painting on china, fruit set—	
(1) Albert Henley, Indianapolis, Ind.....	4 00
(2) Mrs. E. P. Thayer, Greenfield, Ind.....	2 00
Painting on china, chocolate set—	
(1) Mrs. Mary R. Garver, Indianapolis, Ind.....	4 00
(2) Mrs. G. E. Brittain, Dayton, Ohio.....	2 00
Painting on china, salad set—	
(1) Mrs. Willis Fugate, Indianapolis, Ind.....	4 00
(2) Mrs. Mary R. Garver, Indianapolis, Ind.....	2 00
Painting on china, tea set—	
(1) Mrs. Mary R. Garver, Indianapolis, Ind.....	4 00
(2) Mrs. Willis Fugate, Indianapolis, Ind.....	2 00
Painting on china, soup set—	
(1) No award.	
(2) No award.	
Painting on china, pudding set—	
(1) Mrs. Mary R. Garver, Indianapolis, Ind.....	4 00
(2) Mrs. E. P. Thayer, Greenfield, Ind.....	2 00
Painting on china, game set—	
(1) Daisy C. Altland, Indianapolis, Ind.....	6 00
(2) Mrs. E. P. Thayer, Greenfield, Ind.....	3 00
Painting on china, fish set—	
(1) Mrs. E. P. Thayer, Greenfield, Ind.....	6 00
(2) Daisy C. Altland, Indianapolis, Ind.....	3 00
Painting on china, library set—	
(1) Mrs. Mary R. Garver, Indianapolis, Ind.....	3 00
(2) Mrs. F. E. Wolcott, Indianapolis, Ind.....	1 50

Painting on china, manicure set—	
(1) Mrs. Mary R. Garver, Indianapolis, Ind.....	3 00
(2) Mrs. E. P. Thayer, Greenfield, Ind.....	1 50
Painting on china, fernery—	
(1) Mrs. E. P. Thayer, Greenfield, Ind.....	3 00
(2) Flora V. Greenstreet, Indianapolis, Ind.....	1 50
Painting on china, six plates—	
(1) Stella Huntington, Cumberland, Ind.....	4 00
(2) Flora V. Greenstreet, Indianapolis, Ind.....	2 00
Painting on china, six cups and saucers—	
(1) Mrs. Mary R. Garver, Indianapolis, Ind.....	3 00
(2) Mrs. E. P. Thayer, Greenfield, Ind.....	1 50
Painting on china, conventional design—	
(1) Mrs. Mary R. Garver, Indianapolis, Ind.....	3 00
(2) Flora V. Greenstreet, Indianapolis, Ind.....	1 50
Painting on china, ideal head—	
(1) Mrs. John O. Spahr, Indianapolis, Ind.....	6 00
(2) Mrs. Charles F. Kramer, Indianapolis, Ind.....	3 00
Painting on china, ideal figure—	
(1) Flora V. Greenstreet, Indianapolis, Ind.....	6 00
(2) Mrs. Charles F. Kramer, Indianapolis, Ind.....	3 00
Painting on china, portrait—	
(1) Flora V. Greenstreet, Indianapolis, Ind.....	6 00
(2) Mrs. L. M. Buell, Beloit, Wis.....	3 00
Painting on china, three ornamental pieces—	
(1) Flora V. Greenstreet, Indianapolis, Ind.....	3 00
(2) Mrs. Mary R. Garver, Indianapolis, Ind.....	1 50
Painting on china, best original piece—	
(1) Mrs. G. E. Brittain, Dayton, Ohio.....	2 00
(2) Albert Henley, Indianapolis, Ind.....	1 00
Painting on china, under instruction—	
(1) Mrs. John O. Spahr, Indianapolis, Ind.....	4 00
(2) Flora V. Greenstreet, Indianapolis, Ind.....	2 00
Painting on china, best specimen not mentioned—	
(1) Mrs. Charles F. Kramer, Indianapolis, Ind.....	3 00
(2) Mrs. Charles F. Kramer, Indianapolis, Ind.....	1 50
Painting on china, tableware display—	
(1) Mrs. E. P. Thayer, Greenfield, Ind.....	5 00
(2) Mrs. Mary R. Garver, Indianapolis, Ind.....	2 00
Painting on china, mush and milk set—	
(1) Mrs. Mary R. Garver, Indianapolis, Ind.....	4 00
(2) Mrs. E. P. Thayer, Greenfield, Ind.....	2 00
Painting on china, decorated water pitcher—	
(1) Mrs. E. P. Thayer, Greenfield, Ind.....	3 00
(2) Mrs. P. M. Dill, Indianapolis, Ind.....	1 50

Painting on china, delph—	
(1) Mrs. E. P. Thayer, Greenfield, Ind.	4 00
(2) Mrs. Willis Fugate, Indianapolis, Ind.	2 00
Best entire display china painting—	
(1) Mrs. E. P. Thayer, Greenfield, Ind.	10 00
(2) Flora V. Greenstreet, Indianapolis, Ind.	5 00
Painting on glass, mineral colors, display—	
(1) Mrs. E. P. Thayer, Greenfield, Ind.	5 00
(2) Mrs. E. P. Thayer, Greenfield, Ind.	2 50

CLASS LXX—CHINA—PROFESSIONAL.

(Mrs. Frank Collett Jones, Frankfort, Ind., Judge.)

Landscape decoration on plaque—	
(1) A. L. Orndorff, Indianapolis, Ind.	4 00
(2) Mrs. C. F. Palmer, Indianapolis, Ind.	2 00
Painting on china, Persian specimen—	
(1) A. L. Orndorff, Indianapolis, Ind.	4 00
(2) Mrs. Minnie Wilcox, Indianapolis, Ind.	2 00
Painting on china, three ornamental pieces—	
(1) Mrs. C. F. Palmer, Indianapolis, Ind.	6 00
(2) Mrs. Minnie Wilcox, Indianapolis, Ind.	3 00
Painting on china, relief gold—	
(1) Mrs. Minnie Wilcox, Indianapolis, Ind.	4 00
(2) A. L. Orndorff, Indianapolis, Ind.	2 00
Painting on china, enamel—	
(1) Mrs. Minnie Wilcox, Indianapolis, Ind.	4 00
(2) Mrs. Wm. H. Welch, Indianapolis, Ind.	2 00
Painting on china, punch bowl and cups—	
(1) Mrs. Minnie Wilcox, Indianapolis, Ind.	6 00
(2) Mrs. Wm. H. Welch, Indianapolis, Ind.	3 00
Painting on china, game, plaque—	
(1) Mrs. Minnie Wilcox, Indianapolis, Ind.	6 00
(2) Mrs. Wm. H. Welch, Indianapolis, Ind.	3 00
Jardiniere—	
(1) Mrs. Minnie Wilcox, Indianapolis, Ind.	4 00
(2) A. L. Orndorff, Indianapolis, Ind.	2 00
Painting on china, claret pitcher and cups—	
(1) Mrs. Minnie Wilcox, Indianapolis, Ind.	6 00
(2) Mrs. Wm. H. Welch, Indianapolis, Ind.	3 00
Painting on china, chocolate set—	
(1) A. L. Orndorff, Indianapolis, Ind.	6 00
(2) Mrs. Minnie Wilcox, Indianapolis, Ind.	3 00
Painting on china, tea set—	
(1) Mrs. Minnie Wilcox, Indianapolis, Ind.	4 00
(2) Mrs. Wm. H. Welch, Indianapolis, Ind.	2 00

Painting on china, salad set—	
(1) Mrs. Minnie Wilcox, Indianapolis, Ind.....	4 00
(2) Mrs. Minnie Wilcox, Indianapolis, Ind.....	2 00
Painting on china, library set—	
(1) Mrs. Minnie Wilcox, Indianapolis, Ind.....	4 00
(2) A. L. Orndorff, Indianapolis, Ind.....	2 00
Painting on china, fruit set—	
(1) Mrs. Minnie Wilcox, Indianapolis, Ind.....	6 00
(2) A. L. Orndorff, Indianapolis, Ind.....	3 00
Painting on china, pudding set—	
(1) Mrs. Minnie Wilcox, Indianapolis, Ind.....	4 00
(2) Mrs. Wm. H. Welch, Indianapolis, Ind.....	2 00
Painting on china, soup set—	
(1) A. L. Orndorff, Indianapolis, Ind.....	5 00
(2) Mrs. Wm. H. Welch, Indianapolis, Ind.....	2 50
Painting on china, lustre—	
(1) A. L. Orndorff, Indianapolis, Ind.....	4 60
(2) Mrs. C. F. Palmer, Indianapolis, Ind.....	2 00
Painting on china, six plates—	
(1) Mrs. Minnie Wilcox, Indianapolis, Ind.....	4 00
(2) Mrs. C. F. Palmer, Indianapolis, Ind.....	2 00
China conventional design—	
(1) Mrs. Minnie Wilcox, Indianapolis, Ind.....	4 00
(2) A. L. Orndorff, Indianapolis, Ind.....	2 00
Ideal head, china or porcelain—	
(1) A. L. Orndorff, Indianapolis, Ind.....	4 00
(2) A. L. Orndorff, Indianapolis, Ind.....	2 00
Ideal figure, china or porcelain—	
(1) Mrs. Wm. H. Welch, Indianapolis, Ind.....	4 00
(2) A. L. Orndorff, Indianapolis, Ind.....	2 00
Portrait, china, original design—	
(1) Mrs. C. F. Palmer, Indianapolis, Ind.....	4 00
(2) Mrs. Wm. H. Welch, Indianapolis, Ind.....	2 00
Painting on china, dusted tinting—	
(1) Mrs. C. F. Palmer, Indianapolis, Ind.....	4 00
(2) Mrs. Minnie Wilcox, Indianapolis, Ind.....	2 00
Decorated water pitcher—	
(1) A. L. Orndorff, Indianapolis, Ind.....	6 00
(2) Mrs. Minnie Wilcox, Indianapolis, Ind.....	3 00
Painting on china, under instruction—	
(1) Mrs. Wm. H. Welch, Indianapolis, Ind.....	6 00
(2) Mrs. Minnie Wilcox, Indianapolis, Ind.....	3 00
Painting on china, six cups and saucers—	
(1) Mrs. Minnie Wilcox, Indianapolis, Ind.....	6 00
(2) Mrs. Wm. H. Welch, Indianapolis, Ind.....	3 00

Painting on china, punch bowl and cups—	
(1) Mrs. Minnie Wilcox, Indianapolis, Ind.....	4 00
(2) Mrs. Wm. H. Welch, Indianapolis, Ind.....	2 00
Painting on china, best specimen not mentioned—	
(1) Mrs. Wm. H. Welch, Indianapolis, Ind.....	4 00
(2) Mrs. C. F. Palmer, Indianapolis, Ind.....	2 00
Painting on china, under glaze display—	
(1) A. L. Orndorff, Indianapolis, Ind.....	6 00
(2) Mrs. Minnie Wilcox, Indianapolis, Ind.....	3 00
Painting on glass, mineral colors—	
(1) A. L. Orndorff, Indianapolis, Ind.....	6 00
(2) A. L. Orndorff, Indianapolis, Ind.....	3 00
Painting on delph, decoration—	
(1) Mrs. C. F. Palmer, Indianapolis, Ind.....	4 00
(2) Mrs. C. F. Palmer, Indianapolis, Ind.....	2 00
Best entire display china painting—	
(1) Mrs. Minnie Wilcox, Indianapolis, Ind.....	12 00
(2) Mrs. Wm. H. Welch, Indianapolis, Ind.....	6 00

The following is a list of the exhibitors in the Mechanical Department of the Indiana State Fair of 1904:

American Steel and Wire Company, Chicago, Ill.
 Anthony Fence Company, Tecumseh, Mich.
 Adrian Wire Fence Company, Adrian, Mich.
 Appleton Manufacturing Company, Batavia, Ill.
 Armour Fertilizer Works, Chicago, Ill.
 American Food Company, Chicago, Ill.
 Anchor Buggy Company, Cincinnati, O.
 Ahlbrand Carriage Company, Seymour, Ind.
 American Harrow Company, Detroit, Mich.
 Ann Arbor Machine Company, Philadelphia, Pa.
 Acetylene Gas Light Company, Indianapolis.
 Adams, J. D. & Co., Indianapolis.
 Ben Steele Weigher Company, Peoria, Ill.
 Bimel Carriage Company, Sidney, Ohio.
 Binkley Buggy Company, Tipton, Ind.
 Buckeye Buggy Company, Columbus, Ohio.
 Burke-Bollmeyer Manufacturing Company, Wauseon, Ohio.
 Boulton Stock Raek Company, Covington, Ohio.
 Blaine Harrow Manufacturing Company, Piqua, Ohio.
 Baker Company, A. D., Swanton, Ohio.
 Bradley, David, Manufacturing Company, Bradley, Ill.
 Barton-Parish Refrigerator Company, Danville, Ill.
 Brown-Manly Plow Company, Malta, Ohio.

Brown Bros., Nappanee, Ind.
Co-Operative Granite Company, Cleveland, Ohio.
Cleveland Steel Post Company, Cleveland, Ohio.
Case, J. I., Threshing Machine Company, Indianapolis.
Columbia Carriage Company, Hamilton, Ohio.
Columbus Buggy Company, Columbus, Ohio.
Capital Gas Engine Company, Indianapolis.
Clipper Plow Company, Defiance, Ohio.
Case, J. I., Plow Company, Racine, Wis.
Conde, H. T., Implement Company, Indianapolis, Ind.
Chicago Scale Company, Chicago, Ill.
Campbell Fanning Mill Company, Detroit, Mich.
Champion Evaporator Company, Hudson, Ohio.
Calvin Chase, South Charleston, Ohio.
Cassopolis Manufacturing Company, Cassopolis, Mich.
Cutler & Proctor Company, Peoria, Ill.
Davis, Geo. W., Company, Richmond, Ind.
Dill Motor Power Pump Company, Danville, Ind.
Enterprise Foundry and Fence Company, Indianapolis, Ind.
Everett Seed Company, Indianapolis, Ind.
Eastern Moline Plow Company, Indianapolis, Ind.
Evans Manufacturing Company, Springfield, Ohio.
Frost Wire Fence Company, Cleveland, Ohio.
Farmers' Guide Publishing Company, Huntington, Ind.
Fisher Automobile Company, Indianapolis, Ind.
Fort Wayne Wind Mill Company, Fort Wayne, Ind.
Fairbanks, Morse & Co., Indianapolis, Ind.
Fesser, Frank S., Company, Indianapolis, Ind.
Flint & Walling, Kendallville, Ind.
Foos Manufacturing Company, Springfield, Ohio.
Fielder & Ardery, Elizabethtown, Ind.
Gilbreath Seed Company, Indianapolis, Ind.
Galion Buggy Company, Galion, Ohio.
Gates-Osborne Carriage Company, Indianapolis.
Grand Rapids Plaster Company, Grand Rapids, Mich.
Gates & Co., F. E., Indianapolis, Ind.
Goshen Cement Post and Block Company, Goshen, Ind.
Geneva Metal Wheel Company, Geneva, Ohio.
Grant Concrete Fence Post Company, Whitestown, Ind.
Gaumer Engine Company, Marion, Ind.
German Kali Works, New York City, N. Y.
Haynes & Hedges, Richmond Dale, Ohio.
Hadley Derrick Company, Indianapolis, Ind.
Hall, J. R., Indianapolis.
Huntington & Page, Indianapolis, Ind.

Hearsey Vehicle Company, Indianapolis, Ind.
Hurst & Co., Chas. B., Chillicothe, Ohio.
Hamilton, J. M., Dayton, Ohio.
Hoosier Gas Machine Company, Indianapolis, Ind.
Heller-Aller Company, Napoleon, Ohio.
Hunter's Double Truss Gate Company, Lawrence, Ind.
Hoover-Prout Company, Avery, Ohio.
Hayes Pump and Planter Company, Galva, Ill.
Hocking Valley Manufacturing Company, Lancaster, Ohio.
Hench & Dromgold Company, York, Pa.
Hunt-Helm-Ferris Company, Haword, Ill.
Hutchins Roller Swing Company, Alton, Ill.
Imbler Fence Company, Zionsville, Ind.
Interstate Woven Wire Fence Company, Indianapolis, Ind.
Indiana Anchor Fence Company, South Bend, Ind.
Indianapolis Tent and Awning Company, Indianapolis, Ind.
Ionia Wagon Company, Ionia, Mich.
Indiana Oil Tank Line, Indianapolis, Ind.
Ironton Disc Plow Company, Ironton, Ohio.
Indiana Road Machine Company, Fort Wayne, Ind.
International Harvester Company, Indianapolis, Ind.
Isch & Ditewig, Peoria, Ill.
Indianapolis News, Indianapolis, Ind.
Indianapolis Sentinel, Indianapolis, Ind.
Indiana Farmer Company, Indianapolis, Ind.
Johns, A. L. & Co., Fort Wayne, Ind.
James & Mayer Buggy Company, Lawrenceburg, Ind.
Janesville Machine Company, Janesville, Wis.
Johnson Harvester Company, Batavia, N. Y.
"Kant Swag" Gate Company, Indianapolis, Ind.
Kemp, J. S., Manufacturing Company, Toledo, Ohio.
Knightstown Buggy Company, Knightstown, Ind.
Kalamazoo Tank and Silo Company, Kalamazoo, Mich.
Kenney, E. T., Company, Indianapolis, Ind.
Kiler Motor Pump and Supply Company, Indianapolis, Ind.
Keystone Manufacturing Company, Sterling, Ill.
La Baw, Clayton T., Indianapolis, Ind.
Lamb Wire Fence Company, Adrian, Mich.
Lawrence Publishing Company, Cleveland, Ohio.
Loomis Machine Company, Tiffin, Ohio.
Lincoln Carriage Company, Greensburg, Ind.
Lambert Gas and Gasoline Engine Company, Anderson, Ind.
Long-Alstatter Company, Hamilton, Ohio.
Louden Machinery Company, Fairfield, Ia.
Manlove Gate Company, Milton, Ind.

Morris & Co., Nelson, Mt. Carmel, Ill.
Moon Bros. Company, St. Louis, Mo.
Mier Carriage and Buggy Company, Ligonier, Ind.
Martinsville Buggy Company, Martinsville, Ind.
Midland Manufacturing Company, Tarkio, Mo.
Marion Manufacturing Company, Marion, Ohio.
Milwaukee Hay Tool Company, Milwaukee, Wis.
Mast, Foos & Co., Springfield, Ohio.
Money Weight Scale Company, Indianapolis, Ind.
Marion County Mail, Indianapolis, Ind.
Muncie Manufacturing Company, Muncie, Ind.
Mast, P. P. & Co., Springfield, Ohio.
Moses & Baumgartner, Berne, Ind.
Miller Manure Spreader Company, Columbus, Ohio.
Manson-Campbell Company, Detroit, Mich.
McConnell & Ellis, Indianapolis, Ind.
McDonald Bros., Pleasant Hill, Mo.
National Lawn Furniture Manufacturing Company, Indianapolis, Ind.
New Era Gas Engine Company, Dayton, Ohio.
National Drill Company, Cambridge City, Ind.
New Enterprise Machinery Company, Chicago, Ill.
National Hot Air Furnace Company, Dayton, Ohio.
Ohio Rake Company, Dayton, Ohio.
Ohio Cultivator Company, Belleview, Ohio.
Page Woven Wire Fence Company, Adrian, Mich.
Poindexter Manufacturing Company, Indianapolis, Ind.
Pose Bros. Buggy Company, Columbus, Ohio.
Parry Manufacturing Company, Indianapolis, Ind.
Pope Motor Car Company, Indianapolis, Ind.
Porter, J. E., Company, Indianapolis, Ind.
Parsons Band Cutter and Self Feeder Company, Newton, Ia.
Peru Plow Company, Peru, Ill.
Parsons, Rich & Co., Newton, Ia.
Petro, C. W., Danville, Ind.
Plymouth Manufacturing Company, Plymouth, Ohio.
Parlin & Orndorff, Canton, Ill.
Quaker Manufacturing Company, Chicago Heights, Ill.
Rhea-Theelson Implement Company, Peoria, Ill.
Reeves & Co., Columbus, Ind.
Ross, E. W., Company, Springfield, Ohio.
Rosenthal Corn Husker Company, Milwaukee, Wis.
Ross Supply Company, Anderson, Ind.
Ralph & Wiest, Indianapolis, Ind.
Rochester Radiator Company, Rochester, N. Y.
Russell Wind Stacker Company, Indianapolis, Ind.

Root & Vanderwort, Moline, Ill.
Rude Bros. Manufacturing Company, Liberty, Ind.
Rauh, E. & Sons, Indianapolis, Ind.
Roderick Lean Manufacturing Company, Mansfield, Ohio.
Smith, T. and H., Company, Pekin, Ill.
Shimer & Co., Anderson, Ind.
Shirley, J. N., Lebanon, Ind.
Spring Steel Fence and Wire Company, Anderson, Ind.
Safety Shredder Company, New Castle, Ind.
Smither Roofing Company, Indianapolis, Ind.
Sechler & Co., Cincinnati, Ohio.
Stickney, C. A., Company, St. Paul, Minn.
Syracuse Chilled Plow Company, Syracuse, N. Y.
Stover Manufacturing Company, Freeport, Ill.
Stowell Manufacturing Company, Milwaukee, Wis.
Sterling Manufacturing Company, Sterling, Ill.
Smith Manure Spreader Company, Chicago, Ill.
Spring Grain Drill Manufacturing Company, Peru, Ind.
Shields, Hattie M., Indianapolis, Ind.
Standard Harrow Company, Utica, N. Y.
Shuck Plow Company, Bucyrus, Ohio.
Superior Drill Company, Springfield, Ohio.
Trolley Mail Box Company, Springfield, Ohio.
Tristate Post Fence Company, Ingalls, Ind.
Thomas, J. A. & Co., Indianapolis, Ind.
Thresher World, Chicago, Ill.
Thresherman's Review, St. Joseph, Mich.
Vaughn Manufacturing Company, Plainfield, Ind.
Watson, James H., Crawfordsville, Ind.
Whitman Agricultural Company, Indianapolis, Ind.
Woodhull, Morris, Dayton, Ohio.
Wayne Plow Company, Indianapolis, Ind.
Wilder Strong Implement Company, Monroe, Mich.
Wayne Works, Richmond, Ind.
Wood Bros., Des Moines, Ia.

REPORT OF PROCEEDINGS

OF

Indiana State Association of Fair Managers,

Held at State House January 3, 1905.

The first session of the annual meeting of the Indiana State Association of Fair Managers was called to order by President J. J. Insley at 2 o'clock p. m. Tuesday, January 3, 1905.

The chair announced that the Secretary had not prepared minutes of the previous meeting, as printed copies of the proceedings had been furnished to each member of the association.

Mr. Robert Mitchell of Princeton presided while President Insley read his annual address, as follows:

ROAD CONSTRUCTIONS AND MAINTENANCE.

Much has been said and written upon this topic, and those who desire to inform themselves thereupon may do so without much difficulty. A few years since a committee of the citizens of Philadelphia offered a prize for the best essays on this subject, the State University sitting in award, but save Coxe's celebrated march of hoboes upon the national capital, this seems to be all that has been actually done to realize the hopes of many.

It is not with the view of adding to the literature upon this subject, for it is already abundant, nor of assuming the attitude of a pioneer in a great movement, which must of necessity commence a few years hence, that I take up my present task; but it is for the purpose of urging upon this body the duty of using to the utmost the great influence which you possess, promptly and with due energy, to place our State in the van of a special economic advance of vast importance, that I stand before you at this time.

The great pulpit orator, Henry Ward Beecher, once said that a violent thunderstorm was more productive of pious reflections and prayer in some than a dozen sermons. If this be true, the night of the 6th of July, 1904, with its frequent loud explosions of thunder that rolled and reverberated for many seconds after the initial crash, the steady, torrential

downpour of rain and the ebbing and flowing winds that threatened at times to reach cyclonic proportions, must have been as productive of transient piety as an ordinary protracted meeting. Be that as it may, it certainly furnished an object lesson such as ought not soon be forgotten.

In many counties of our State, and in other States, the morning light revealed such a scene of havoc wrought by the floods of the previous night as afforded the most conclusive evidence of the puerility of our road-making and carried conviction to the mind of the immediate necessity for a radical change in means and mode of construction. Here, the grade had been reduced to a level with the ditch; yonder, the torrents had cut their way through in numerous places; beyond these, a great gap showed where culvert or bridge had been torn out and swept away, thus demonstrating that there had been no adequate calculation of the area of watershed drained into these, and, in some instances, that the water approaches were poorly constructed. The damage was so great that for several days travel and traffic were reduced to the most primitive forms and proportions. In lieu of the occasional dust-covered and begoggled chauffeur, dashing through the flocks of the farmer, leaving in his wake a whirl of feathers and hair, and causing the family carriage mare, jogging comfortably along, to rear and tumble into the ditch; in lieu of the endless procession of wagons, carriages, buggies and carts, the roads wore an aspect of loneliness that was peculiar and striking, broken now and then by a figure upon horseback picking his way carefully along, reminding one forcibly of the days of our fathers, when the roadbed in wet weather was a "slough of despond," and the only firm ground was the path at the side. It was many days ere the roads were restored to not quite so good a condition as they were; how many thousand dollars were expended therein has not yet been shown. But storms such as that described are by no means the only cause of deterioration; heavy loads, with no corresponding width of tire; ruts which are not filled at once, but allowed to fill with water which stands until passing wheels cut through, and, above all, the miserable habit of scraping soil and sod upon the roadbed, the very material which the European mender of roads is so careful to throw away—these all conspire to undo the work of the previous year. Year after year these so-called repairs are made, which serve at best but to put the roads in their former condition, or occasionally, when the management is particularly bad, the former standard is not maintained, but always a large sum of money is expended with but little to show for it but temporary structures, which one year of absolute neglect would almost obliterate. Many of our roads are no better than they were a quarter of a century since, nor does it appear that a half century of such construction and maintenance will improve the situation so long as boards of directors, superintendents and supervisors are left without mathematically correct plans and specifications which must be strictly adhered to. So long as these have no model of any kind before them save that handed

down in our present mode of construction and repairs; so long as road taxes are "worked" out almost at the will of the worker, under a direction which varies with the individual—thus long may we expect to have a system of roads which every other form of construction has left in the rear of material progress at least half a century.

It would be superfluous to go into these details were my only object that of informing this body. I venture to say that there are none here who are not as conversant with these facts as myself and who are not as desirous of reform. The questions are, When? and How? in endeavoring to answer these questions I shall reverse this order, and pursuant thereto will consider what has been done in the past.

Engineers are agreed that the ancient Egyptians must have possessed roads of the most solid character, judging by the soil and weight of the stones that enter into the structure of their temples, obelisks and pyramids; but if so, they have entirely disappeared under the drifting sands of centuries. Apparently, however, the great road-maker of antiquity was Rome. She seems to have adopted this as a part of her military system, and in all of her conquests her road-makers marched with her legions; and no sooner was her authority established over the invaded territory than she fell to making roads therein—good, solid roads, duly equipped with bridges, aqueducts, milestones pointing the way to Rome, and these were soon connected to her own national system. Prisoners taken in war, the subjugated people, slaves and bondsmen were compelled to work upon these under the eye of Roman taskmasters, and under the guard of the legionaries. Nor was it many moons, until the loot of the conquered was pouring along these to fill the imperial coffers and to add triumphal arches and marble palaces to the "Queen City of the World."

After the first fruit of victory and subjugation came the more substantial barter and trade flowing along these artificial channels toward the common center of all, passing battalions and cohorts that were hastening to fill up the depleted ranks of the victorious legions; the exulting answer to all inquiry relative to the way was, "Go on, all roads lead to Rome."

At the beginning of the third century, Rome had twenty-nine great military roads, which began and finished at the gilt column, or "golden milestone," which stood in the forum, and into these converged very many lesser ways. Extending from Rome to Brundisium was (and is) the great Appian Way, twenty feet broad, paved with blocks of dressed stone, closely joined together, with curbs upon either side; beyond which were paved walks for pedestrians, the whole lined upon either side by the marble tombs and monuments of the nation's mighty dead. Into this celebrated highway nine lesser ones ran. With the exception of this road all the other principal ones were sixteen feet in the clear, while those of minor importance were but eight. According to Antoninus the aggregate length of the Roman roads was 52,964 miles; these were projected

along straight lines, no heed being given to obstructions; they climbed hills and mountains, regardless of grade. They were all constructed of blocks of stone more or less smoothly dressed, closely joined together and laid upon a thick bed of concrete; these were superimposed upon a foundation of thick blocks of stone, bound together in mass by a bond of cement; the entire thickness of the structure was three feet; curbs, aqueducts, bridges, milestones, etc., made the system complete, wanting nothing; ditches, dikes, aqueducts and bridges were carefully constructed upon exact mathematical principles; so that after more than fifteen hundred years of use, many yet stand as witness to the skill and knowledge of those who planned and constructed them.

Modern engineers have declared this form of construction far too expensive for imitation. Do they take into full account the small cost of the maintenance of these, and the marvelous increase of facilities for modern construction? Pursuant to her usual policy of binding every integral part of her conquests fast to the empire, no sooner had the legionaries beaten the Britons into subjection than the Romans began to build their characteristic roads to all important points of the island, and the remains of some of these are still visible, though owing to frequent storms, heavy rains, alternate freezing and thawing, the climate has tried them much more severely than upon the continent. But with the withdrawal of the legions to meet the hordes that were pressing hard upon the seven-hill city, and the overthrow of the civil government the island soon relapsed into its former condition, the floods covered up the Roman roads, and instead of that national surety which the conqueror sought through the law, her system of roads, etc., isolation and provincialism soon reappeared with all their usual concomitants of jealousy, hatred and strife. That the English character was as it appeared in the fifteenth century, grave, taciturn and much given to reflecting upon matters of religion, was due in some measure to isolation resulting from the impassable condition of the roads during a considerable portion of the year when fogs, mists, rains and snows and storms held their sway over the ocean-lashed island. The great lesson taught by the Romans was lost, for the roads continued as wretched as they well could be down to the time of Charles II, though as far back as 1350 certain roads had been turned over to private corporations to be kept in a passable condition, in consideration of the right to exact toll at certain fixed rates. In 1550, Parliament imposed upon the parishes through which the roads extended the duty of keeping them passable, but the creeping injustice of this act and the heavy burden it imposed upon some caused so much clamor that it was repealed. In the time of the "Merry Monarch," however, the demands of public travel and trade had grown to such proportions as to require better roads and better maintenance, but it was not until the beginning of the nineteenth century that the present system was also adopted

and began to be carried into effect. Now, however, the broad, smooth highways of England are a splendid supplement to her railway system, and a joy to the touring cyclist and automobilist.

Early explorers in ancient Peru and Mexico found roads that were firm and smooth, connecting all principal points. Humboldt beheld with astonishment the great highway of the Incas—twenty feet broad and of smooth, even surface. On investigation he found that it was constructed much like those of ancient Rome, only the bond was asphalt, as was the top layer. This great road he found to extend two thousand miles, and was duly furnished with ditches, aqueducts, bridges, ferries and even post-houses. His wonder was greatly increased when he found that these builders, instead of carrying their roads over hill and mountain, had actually anticipated the modern by tunneling through them.

Within the territory now covered by the United States, except the almost obliterated roads of the mound-builders, which were of inferior construction, there were none presented to the eye of the early explorer save the Indian trails, which mainly led along the watercourses and through the mountain gaps.

Our notions of road-making were brought from England, and belonged to the time of the "Merry Monarch" rather than a later day. Accordingly the white settlers plowed parallel furrows twenty feet apart and scraped the dirt to the center, so that when the autumnal rains descended this dirt was converted into mud, which teamsters were glad to escape when they could by guiding the cattle to the higher, unbroken and solid ground. No wonder that in the histories of those days we read so much concerning "bad roads," "heavy roads," with frequent "sticking," "miring down," followed by "doubling of teams," much cracking of whips and vociferous profanity. As in the mother country, there came to be toll roads, of somewhat better construction than those of the public.

In 1796 Congress authorized the construction of a national road. This was afterward constructed more or less completely, beginning at Baltimore, Maryland, and extending through a part of Pennsylvania, through Ohio, Indiana and Illinois. It was projected upon a large scale; its extreme width was eighty feet, thirty feet of which was composed of broken stone, gravel and sand, the whole laid, in many places, upon a foundation of large blocks of stone. These dimensions may be taken as indicative of the fathers' conception of the future greatness of our country and its needs; but if so, they may also indicate that it never entered their minds that the motive power of travel would be other than that of horses and cattle. If they misconceived the future, we are to be charged with a like weakness, who abandoned substantial road-making upon the advent of the railroads, as if no other road would ever be required, where we are now beginning to perceive that we need these more than ever, not only to supplement the railroad, but also, by means of autos and traction engines of a swifter sort, to even compete with them.

Of the great roads of France, Germany and other European countries, time will not suffice to speak except to say that the great highway built from Geneva to Milan by Napoleon, who was great in conceiving public works and superintending their construction as in commanding armies, is yet a marvel of engineering skill. It crosses the Alps by the great Simplon pass and stretches, white, smooth and firm, over its many miles, with no ruts to shake the traveler from his nap and no dust to cover his person. The lines along which it was projected were extremely difficult, and therefore the cost was \$15,000 per mile, no dollar of which, it is safe to say, was misapplied, so well did that master-builder know how to handle men and materials.

It is maintained by trained menders of roads duly equipped with the necessary implements of their craft; these are assigned certain sections, which they are required to keep in perfect order and even dust-free. The material used is broken stone of the dimensions of two and one-half inches, well tamped in. It is claimed that this kind of maintenance is not practicable in this country because of the great difference in wages, but no comparison is made between the primitive tools used by the one and the facilities that might be commanded, through the use of which the sections might be greatly lengthened.

That the roads of Europe are so much better than ours, and that there are so many more miles of them is a standing reproach to us, for which the greater age of those countries does not offer complete vindication. Our pre-eminence in the quantity and quality of road-making machinery and accessories that might be brought to bear would soon wipe out our reproach were it not for our miserable system that starts out with no definite standard of construction and maintenance; with men in charge who have no technical knowledge of the work in hand, whose aim it is to keep the roads up to the former standard, at a cost which will not cause taxpayers to protest. The time of mending of roads is a time of general criticising and free profanity; sand, gravel and small boulders, which never pack, are dumped in an irregular ridge in the middle of the road, dirt and sod are scraped to it, and the whole is left for time and chance to smooth out. Culverts are put in without any calculation of the territory drained and the volume of water that must pass through; bridges are built with a like ignorance of possibilities, etc.

Who does not know that all this is mere temporizing, the purpose being limited to handing the work over to one's successor in office at least no worse than it was received? Who does not know that no permanent improvement can result from such work, and therefore that the large sums so expended are, to a very considerable degree, wasted?

In the county of Montgomery, during the year 1903, the township expended for road repair \$33,662.99, the county \$40,000, a total of \$73,662.99. The road mileage is something over 550 miles; figure out from this what the 11,905 miles of county roads in the State cost annually, then

add to this sum the cost of those of the townships. The following, however, may convey some notion of the result: In the year 1892 fifty counties in the State of New York paid out for road improvement \$2,716,000, exclusive of the sums expended in cities, towns and villages. But I must hasten to the conclusion of the matter.

England now uses the combined Macadam and Telford systems with good results. Telford's system begins with an excavation of ten inches, in which stones are laid with their joints broken; the work is open and the interstices are filled with small broken stone tightly compacted; the superstructure is the same as macadam. In macadam we have successive layers of stones broken to the size of $2\frac{1}{2}$ to $2\frac{1}{4}$ inches laid in successive layers and compacted by means of a heavy roller, the small fragments or splinters being used to fill with. Roads so made should have a grade whose incline is not above 4 or 5 per cent. All soil should be carefully removed as fast as it accumulates, ruts filled and firmly tamped at once, and the surface now and then sprinkled and rolled. In regulating the weight that might be hauled over these, one-inch breadth of tire should be required for every 400 pounds.

As to the sources from which labor may be drawn, the State and counties have several which may be drawn upon, when legislative enactment lends the requisite authority. There are a little more than 1,600 convicts in the State's prisons whose labor ought not to be allowed to compete with free labor. The jail records of 1901 show 23,987 commitments; if we subtract 50 per cent. for repeated offenses by the same offender and for those sent to the State prison, etc., we get a large number from which to draw. In 1901 there were 4,338 inmates in the county asylums; if we deduct 70 per cent. for females and infirm persons, a contingent is yet left considerable in size; now add to these tramps, vagrants and all persons able-bodied who show no visible means of subsistence, and we have quite an army. The moral effects of such employment would also be considerable; able-bodied tramps and vagrants would speedily find it to their interest to labor for themselves, and the State would find how utterly foolish it is to destroy a human machine capable of so much labor that is needed to make the State yet greater and add to the comforts and conveniences of her citizens.

Any veteran of the Civil War knows that it will prove no great undertaking for a comparatively small guard furnished with repeating rifles to maintain order and prevent escapes; the more desperate and criminal might wear red shirts or jackets to pick them out, while the colors denoting degree of crime might be shaded down to the comparative innocuous "bum." Movable stockades, tents, hospital tents, shanties, etc., would furnish for the protection in their kind.

I have said that we should now, at this session, begin a movement looking to the results which we desire. Let a committee of this body call upon the Legislature with the request that a resolution be passed ask-

ing the Governor to call upon the President and the Governors of other States to send a certain number of expert civil engineers to meet in congress in the city of Indianapolis at an early date for the purpose of considering all matters relating to road construction and maintenance, with the view of submitting the recommendations to the proper authorities. And that this committee be empowered to take such other action in furtherance of this interest as in its judgment is necessary.

Mr. Mitchell: There is nothing that will build up the agricultural interests of this State so fast and so permanently as good roads. I attended the national convention of Good Roads Associations in St. Louis, and also the Illinois State convention. I think the people of Indiana ought to see that our national legislature makes the bill now pending a law. If that is done it will compel the National Government to pay one-third the expense of building roads, the State paying one-third and the county in which the road is built the other third. That is nothing more than other roads have done. I think our present law is good in regard to roads. We have built one hundred miles in our county in the last five years under our present law. Men who were the most bitter enemies of road improvement when we first began now want to extend the roads faster than the law will permit. The law says we shall go so far, then pay off the debts and begin again. I think that is a very wise law. I think it is a laudable effort to start right in improving the roads of our State. The president spoke of the roads of Scotland and England. One point has been settled there long since, and that is in regard to the Telford system of macadam. That system was a mistake. That system has been abandoned for the Macadam system, which is used universally all over Great Britain. The contractors here ought to have a uniform size for the stone. There are roads being built in Gibson County today in which the stone is not uniform. That is a mistake. Have the stone broken to a uniform size, then cover with good sand or cement and you will have the proper kind of road, a road it is a pleasure to travel over.

THE ST. LOUIS FAIR AS A PROMOTER OF NATIONAL PROSPERITY, AND ITS OBJECT LESSONS TO MANAGERS OF STATE AND LOCAL FAIRS.

HON. J. E. M'DONALD, LIGONIER.

Mr. Chairman and Gentlemen—While I may not be equal to the title, I can give you the ideas I gathered from an inspection of the great World's Fair just closed. Of course, we all know that the greatest advances mankind has made have been by copying what someone else has

done, or following in the footsteps of someone else and endeavoring to improve what he has done. All nations and all men that have advanced have striven to improve upon what other nations and peoples had done. In no place on earth can a man learn better what mankind is doing than at an exposition of the character just closed in St. Louis.

While visiting such an exposition the question is often asked, "Does it pay?" That question has been discussed by men who are engaged in promoting these expositions. In other words, is the flame worth the candle? I believe it is. I believe many dollars more might be spent in acquiring that schooling which comes from visiting a great exposition, a world's fair, a state fair or a county fair. In a fair such as the one just closed the handiwork of the nations of the world is gathered together, as well as their art, their mechanics, their ideas and their history. There everyone who visits the exposition is able to compare in a way the advancement of the different nations. There are lessons there every man needs to learn. There the advancement of the different States may be noted. And allow me to say here that in the comparison our great State of Indiana did not suffer. For the amount of money provided, the citizens of Indiana who had charge of the Indiana exhibit made a great reputation for the State and for themselves. I was most agreeably surprised at the showing made by the agricultural interests of Indiana, and I was much gratified at the comparison of our exhibit with that of other States by men who did not live in Indiana. The opinion was expressed by everybody that the exhibit did great credit to the State. For the men who were in charge of the Indiana exhibit I will say that we who are connected with the State and other fairs are under everlasting obligations to them. The horticultural and other exhibits of our State compared very favorably with other exhibits of a like kind. I believe that we, as farmers, as business men and as men engaged in mechanical and business pursuits, feel that the money proposition was a very small one compared with what this presentation of the resources of Indiana did for our great State. I believe it is not a waste of money to invest it in such expositions, nor is it a waste to invest it in State and county fairs. I do not think the commercial side is the one to be considered all the time. I admit that to a sordid business man it probably looked like a bad investment; and I suppose such a man would think it a bad investment to have \$250,000 tied up in fair grounds and buildings used only once a year. We have that amount of money invested in our State Fair Grounds and buildings, which we use only one week in the fifty-two, and the man who undertakes to figure a money profit on everything will think the result of the investment is not what it should be. It looks to the man who figures on the money part of a proposition all the time as though the expenditure of millions of dollars in St. Louis without any return in sight was not a very good investment. I do not

agree with such a man. I believe the money spent by the State of Indiana in presenting to the world our resources was well spent, and I believe the money of other States and the money of individuals who went there to present their resources to the world was well spent, even if the returns at this particular time do not seem to meet the outlay.

As an advertising proposition I believe the best thing in the world is to get the article you wish to sell before the individual who needs it. I believe the best advertising one can do is to get the article you have to sell before the person you wish to interest. In no place can that be done to better advantage than in a great exposition or in a fair. I will give you a little bit of personal experience. At my home I am interested in a particular kind of business. In my trips through the exposition grounds in St. Louis I saw a piece of machinery I have felt the need of for years. I did not know the machine was in existence until I passed through one of the buildings on the grounds. I left my order there for that piece of machinery I had been in need of for years. That is not the only thing of value I found at the fair. I was at that time a member of a committee to decorate a new club room we were building in my town. I had charge of the illuminating, and I had difficulty in finding a way to illuminate the rooms so the light would be subdued to a certain degree. In a building at the fair I saw a room illuminated in just the way I wanted our club building. I got the card of the man in charge of the exhibit, and last Friday night at a meeting moved to allow a bill for \$213 to pay for goods furnished by that firm. We would never have bought these goods, or even have known they were manufactured, if I had not seen that particular exhibit, although they were manufactured in a town not 125 miles from my home.

People who were interested in stock, or hogs, or grain, got ideas there. There are few men or women who visited the fair that did not get some ideas that were of value to them. I believe in our fairs, both State and county; we ought to bring together as much as possible the interests of the whole community. We ought to undertake to show all of our manufacturing interests, our farming interests, our stock interests and our poultry interests, and make the exhibits as varied and as comprehensive as possible. The broader we make the exposition, the more we interest the people directly and indirectly, the better will we serve our purpose. In the State fair and in the exposition all interests should be represented. I believe the educational interests of Indiana should be represented at the fairs. No one thing gave me more pleasure than the educational exhibit in St. Louis. I visited that exhibit several times. I want to say, in justice to the people who had it in charge, that it was one of the most remarkable exhibits in the exposition. I have had years of experience as a teacher in the public schools, but I learned many things of the schools of Indiana from that exhibit that I never even dreamed existed. The excellence of the work, the high character of the organi-

zation and the immense amount of work being done in the schools of our State was a revelation to me. The manner in which it was presented was one of the very best advertisements that our State ever had.

I believe at all our State and county fairs we ought to give heed to the interests of the stock man, the farmer, and the horticulturist, but we ought also to do something to stimulate the school system of Indiana, the manufacturing interests, and, in fact, everything that will arouse the interest of the people of the State.

The exposition at St. Louis, from the standpoint of what it has done and what it will do for the business interests of the United States, presents a many-sided problem. I believe the exposition marked the beginning of an era in American industries that is for the good of the people. While the fair was not a success from a financial point of view, I do not believe it is the last great exposition I will have an opportunity to attend, notwithstanding the fact that I am over the hill and on the way down. I believe most of us here will live to see another great exposition in this great country of ours. I believe the people of this country so thoroughly understand the value of advertising, and so thoroughly appreciate what such an exposition can do for our country that similar enterprises will be promoted from time to time.

HOW SHALL WE IMPROVE THE AGRICULTURAL DEPARTMENTS OF OUR DISTRICT AND COUNTY FAIRS AND AWAKEN A GREATER POPULAR INTEREST THEREIN?

L. B. CLORE, FRANKLIN.

The agricultural department of not only district and county fairs, but also State fairs and National expositions, should stand at the head of the various departments, because it represents more wealth than any other department and almost equal to the value of all other departments combined. These exhibits should be made attractive, and if considered correctly it is of great importance as an educator to the farmer who cares to improve his crops. The week of the district or county fairs should be a week of enjoyment to the farmer, collecting in a few potatoes, squashes, pumpkins, corn, wheat, oats, etc., and if well selected will not only pay him for his trouble, but he will have a neat sum left, which will more than pay his expenses during the fair. If not successful he will endeavor to learn what has been the cause of his failure. It may be a poor variety has been selected or some needed preparation of the soil has been neglected, or the cultivation has been poor. There can not be a better

time not only to compare but to discuss the different specimens, thus enabling the farmer to improve his crops and obtain better results for his labor. I would suggest that one of the first and most important things to be done is to educate the people to the importance of the agricultural department. It is time this department is considered of more importance at the present time than it was a few years past, and the first to realize this fact were the merchants, manufacturers, etc., for they know that on the success of the farmer hinges the success of all other departments of business. While the list of the agricultural department of the district and county fairs only covers a part of the farmer's work, crops grown from the soil, and also has cattle feeding, dairying, feeding of hogs, raising of cattle and many other different lines of work, yet these are largely dependent upon the crops that are grown from the soil. If I could say something that would cause the tiller of the soil to be more contented and to feel that his occupation was at the top of the list, that his work is with Nature and is closer to God at all times than any class of professional work, I would feel well paid for my trouble. I would say to the fair managers, place the agricultural department where it belongs—not in a shed, but in a well-arranged and attractive building. Do not place the value of the premium on the individual exhibit, but place the value of the prize in proportion to what it represents. If the value of the corn crop is more than the value of the horse industry, or the cattle industry, why should not the value of the prize be in proportion to what they represent? If the wheat grown in the United States has an equal value with the dairy interests, why should not that stand on an equal footing in the list of prizes? The live stock men would reply by saying: "We have a large number of breeds of live stock and great progress has been made in the improvement of the different breeds." Which is true. But would you stop and consider that there are a larger number of varieties of grain, and that the same progress is being made by scientific breeding, and that the wealth of the country is being increased faster by the improvement of farm crops than through any other industry? I am only making these comparisons to prove the importance of the agricultural department, and hope to increase a general interest in this department with the Board of Fair Managers. Not to look at the exhibitor of the agricultural department as a class of men only farming because they do not have the ability for any other profession, but that they are agriculturists from a matter of choice, and deserve a proper recognition. I would suggest that the superintendent of this department be an active, energetic man, one that has the confidence and respect of the people and has made a success of farming and is familiar with the different standard varieties of grains and vegetables. The most disgusting thing that occurs in the agricultural department is from the visitors who remark, "I wish that I had brought such and such a thing that I had at home, as it was far superior to the article on exhibition." Possibly this is true, but as a rule he has over-

estimated his product, and is a case of ignorance rather than facts. Even should it be so, he had the same privilege to exhibit, and the remark is altogether out of place. However, great progress has been made in the agricultural department. At the Louisiana Purchase Exposition the agricultural building was the largest in the grounds and was more compact with exhibits. It had the largest attendance and gave a more general satisfaction to the visitors than any of the various departments of the great exposition.

Hon. C. B. Benjamin: Mr. Clore has spoken of interesting young men, and I believe that is an essential thing. It has been my experience that young men are making a creditable showing, not only at county fairs and agricultural exhibits, but at the State fair. I think more emphasis should be placed upon the necessity of larger exhibits along the agricultural line. These exhibits should take a larger place in the fairs than they do now. They ought to take a place fully equal to that of the live stock exhibit. I think the results will be better if we look upon agriculture with a little more favor than we have in the past.

The treatment of the exhibitors has not been touched upon, and I think we ought to devote some time to the discussion of that question. I think we should meet the exhibitor when he comes, make him feel at home, say a pleasant word at parting, and he will be glad to come again. Make the quarters assigned the exhibitors inviting. I think the agricultural buildings should be handsomely built, not mere sheds. Try to arrange space to the satisfaction of all. I believe the agricultural people are more easily satisfied by bunching them than are any other class of exhibitors attending State and county fairs. Don't give one exhibitor the lion's share and crowd others. Be courteous and fair to all, and show no partiality. Treat everyone alike. Of course there are imperfections in human nature, but the superintendent should overlook them and try to give no one a reason for fault-finding. Select judges who are fearless, honest, straightforward—judges who will give the award to the article exhibited instead of to the exhibitor. Begin on time and follow out the plan laid down in the catalogue so far as possible. In this way no one need be absent when his exhibit is being judged. Last, but not least, I believe in a general superintending of the judging, to see that all exhibitors do their part by not interfering, and then everything will pass off all right. If we follow this plan we will reap our reward in the general feeling of satisfaction that will prevail, and the exhibitors will show their appreciation by coming back with exhibits in future years. New things are coming up all the time that have to be added to the list, and when the exhibitor is interested enough to take part in revising the list of exhibits I think we will have accomplished something that is needed all over the country. It is rather hard to get a good agricultural exhibit in this part of the country, owing to the late crops and early fairs.

SOME OF THE REQUISITES OF A SUCCESSFUL FAIR, AND
SOME OF THE MISTAKES OF FAIR MANAGERS.

PROFESSOR J. H. SKINNER, PURDUE UNIVERSITY.

Mr. Chairman and Gentlemen of the Fair Association—With your permission I wish to change the subject assigned to me so as to read "Some Requisites of a Successful Fair; or, Suggestions for the Improvement of County Fairs, Especially the Live Stock Departments."

The county fairs deserve much credit, for to them is due, in a measure, the improvement in corn, live stock, fruits and other farm products. The history of most of them will show a varied career. Where they have been properly and wisely managed they have had a telling influence for good, and may be classed among the foremost educational institutions in the field of agriculture.

These agricultural associations were originally held for the purpose of educating the farmers and breeders. The exhibits made represented their ideals as well as they knew how to develop them. Many times competition was very strong; in fact, I have seen single classes of animals, and even departments, at county fairs, in which there were just as strong exhibits and where almost as many entries were made as at the State fair. Farmers are always interested in stock and will support any improvement made in this direction.

Too frequently the fair of today is made up of fakirs, jockeys and cheap, undignified amusements. The local fair should furnish social entertainment and provide recreation and amusement of a proper character, but these features should not predominate. It should strive to make all exhibits of interest and educational value and such as will appeal to the best citizens, whether farmer or merchant. The live stock departments, as well as other departments which draw from the farm, should furnish ideals for breeders and farmers. The county fair is the stepping stone for the inexperienced and ambitious farmer and breeder. Most of the noted live stock exhibitors of today began showing at county fairs, and many of them learned their best lesson when some competent judge saw fit to leave their animals out of the prize list, and then explain why he did so.

Young men should be encouraged to make exhibits, as such comparisons are profitable. They inspire enthusiasm and ambition and encourage improvement in all branches of agriculture. The fair should be held for the agriculture and business of the community. It should bring out ideals which should be so high that all would strive to reach them.

Many of our county fairs are well managed and serve an excellent purpose. Many of them might be improved in many features. Concerning the larger problem of managing a county fair, I have little to say,

as every county has local conditions which must be met by the managers. Certainly anything that serves to elevate the people and inspire them to better work in their particular line is a desirable feature in the county fair. Every fair association has its difficulties, the chief of which is the financial condition of the association. To make a good county fair requires money. This will be obtained where the association receives the hearty support of the farmers and business men of the community. Therefore it is necessary for the managers to keep in line with those things which will appeal to those of whom they expect support.

It is true that the fair makes a splendid place for social gathering and also a place of recreation and amusement for many country people who consider it a great privilege to be able to attend. When we turn our attention to the improvement of conditions already in existence, I wish to speak more particularly of the live stock department. To begin with, much will be gained by getting out the catalogue early in the season. Before this is done it is necessary to select superintendents for the various departments, and along this line there is much room for improvement. Too frequently the directors select superintendents who are not particularly interested in the department which they represent, and it may be that they are not well informed as to what the department should be. A good superintendent in any one of the live stock departments should be a handler or breeder of that particular kind of stock which his department represents. Not only this, but it is preferable if some reliable breeder who has had experience in live stock shows be chosen. If such is chosen he understands the needs of the department, the needs of the exhibitor and the importance of clean, honest judges. The superintendent of the department should be a man who is aggressive, and thus able to secure exhibitors and make the department first-class. In order to build up the department he should be a man of integrity, one in whom people generally have confidence, and one who will see that every exhibitor has fair treatment. The superintendent should be a man who understands proper classifications of stock, as this is one of the things which goes to make a good live stock show.

As nearly as possible the classes should be such as to represent one breed only. It is true that where there is a limited premium fund it is impossible to extend the classification as far as that of the State fair, and yet for most breeds such a classification is an improvement over the old method of throwing several breeds together. Furthermore, there should be classes for local exhibitors, county classes if you please, in which the young men of the county will be encouraged to exhibit home-grown products. At one county fair where I was privileged to judge, the county classes drew out large numbers of animals, and I am quite sure that it was of as much real value to the farmers and breeders of the county as the open classes. Anything that will encourage the attendance of the farmers of the community should be given a place.

After the classification is made the next problem is the selection of competent judges. In regard to this there is much to be said, as there are many difficulties encountered when it comes to securing competent judges. The limited funds, the scarcity of capable, honest judges, the lack of interest in superintendents and the consequent neglect of the matter; and maybe the lack of knowledge as to where to find the kind of a man wanted, are some of the difficulties encountered. The average invitation to judge at a county fair asks for a man who can judge all classes of animals and sometimes poultry and pet stock. This doubtless is due to the fact that the board has the idea that one judge can do it all, and thus save expense. This supposed lack of funds or economical streak is one of the greatest difficulties. In a fair where horses were a prominent feature an expert race-horse starter judged all horses, light, coach, heavy draft, etc. Such a man might be a judge of light horses, and there is a bare possibility that he might judge other classes, but it is not probable (and this was not true in this case), but it saved the extra expense of securing a draft-horse judge. There are but few all-around judges in the country, and much will be gained by securing a man who is an expert in some particular line. The expense is greater, but it is a legitimate expenditure and will prove profitable in the end. It may possibly be better to cut the premiums a little, and thus be able to secure a competent judge. Most exhibitors would prefer a cut in premiums to a poor judge. There are many men competent to judge one class of animals who will do the work for a reasonable sum, and occasionally men who can judge two classes, but it is not likely that many will give satisfaction in more than two classes, unless specially trained for such work.

The fair associations ought to help one another in securing judges; in fact, a printed list of acceptable judges within the State would be a desirable thing. This list should include those who have had experience and have proven themselves honest, capable judges. It might also include a list of young men who have had training in some particular line, or who have grown up as breeders, and who have qualifications for such work. Sometimes the animal husbandry department of the agricultural college might be of assistance in securing such men. Many times young breeders attend agricultural schools, supplementing their experience and knowledge with such training as is given in these institutions. These, of course, are inexperienced, but far more capable than the "pick-up," and in most cases strictly fair and honest. The matter of securing judges will be very much easier if it is given attention early, as judges often have engagements several months ahead. It seems to me that it would be a wise plan to have in the catalogue the name of the judge who is to pass on the various classes of stock, and then the exhibitors would have no complaint on the selection of the judges, as they would know beforehand who was to pass on their stock. Finally in regard to this matter, it is economy to spend money for good, honest, competent judges—men

who are above reproach, and to whom money and favor count very little. Take the matter up early. See that your live stock departments are given honest, reliable, competent men to pass on the classes involved, as exhibitors appreciate what belongs to them.

In my opinion much could be done to improve the county fairs if all departments were made of educational value, or, in other words, if educational features were given a prominent place in every department of the county fair, it would appeal very much more strongly to the agricultural people. There is too much inclination to furnish cheap special features of amusement, you may say. The people who attend the county fairs today in a large number of cases are persons who are attracted by these special features. This does not signify, however, that the best farmers would not take an interest in the county fair, if an effort was put forth to help their sons to know how to select and produce better animals, grow better corn, make a better class of butter or select better farm implements. There are improvements along all lines of agriculture in the State. The mass of the people are looking for something that will help them make more out of their farms; something that will help them to a higher living; something that will make them better business men, and not so much for cheap amusement as some think. Many of our fairs are absolutely degrading. On one hand we find the rum seller and book-maker and on the other hand cheap, vile shows, which have nothing to commend them. They are said to be the paying features of the fair. If such are necessary that fair association had better go out of business, as it is not fulfilling the original purpose for which it was established and is doing the agricultural communities of the State more harm than good.

The county fair should be an illustration of good business methods as well as a good educator. It requires men who have had some experience in matters of business in order to keep the association going. There are buildings to keep in repair, fences to keep up, improvements to make, money to be spent, and many such things which demand the attention of the business man. Yet too frequently we find the directors are lawyers and politicians, who are not in sympathy with the agricultural communities. They seem to have a desire to hold a series of horse races for their own amusement and benefit, rather than have a fair which will be of value in the upbuilding of the interests of the community.

Mr. Thomas: I don't think there is much left for me to say. The paper is certainly a good one and covers many points in connection with county fairs that should be observed. I feel like the young theologian who wrote to a friend, after hearing a famous preacher, that he had taken all his points. I fear the Professor has taken all the points I had to make.

The question of success depends very much on how we view it. If you are looking solely to the financial side you will have one view; if

you are looking solely to the educational benefits you will have another view. One man will say, "We want a wide-open fair, and do not want any Sunday-school methods." On the other hand, there are men connected with fairs who do not like to see the young folks too chummy. They object to the boys and girls eating from the same stick of candy, or eating ice cream with the same spoon, or going about the grounds hand in hand. We must not be too puritanical. There is a happy medium we can observe. It is well enough to have rules to run your fair by, rules you can use in case of an emergency; but it is not a good idea to have iron-clad rules that can not be changed. I remember one fair I had something to do with where they did not allow any vehicles on certain parts of the ground. The superintendent was a stickler for rules. An old lady who could not walk attended the fair, and was hauled into that part of the ground. The superintendent, to be like other mules, took the buggy and hauled it out.

The first essential of a successful fair is to have good business sense and use it. It will not do to have a rule for one class of men and another rule for another class, and it will not do to continually change the men who are connected with the fairs. The first thing I would suggest for a successful fair would be for the management to have absolute fairness in making the awards. They should not tolerate any unfairness. When men go to a county fair to exhibit their stock they make a sacrifice to do it, and it is an accommodation to the management for them to come. I should suggest that whenever you have even a single judge to pass upon a matter, let the committee of that department be close by to see that any unfairness on the part of the judge shall be at once corrected.

Another thing necessary to success is for the fair management to pay what they offer and pay it promptly. A man who earns a premium has been to great expense to do so, and it is of importance to him to get his money and get it promptly. There is nothing that inspires the exhibiting public with a greater degree of confidence in the fair than to know that it promptly pays its debts. I have no sympathy with the idea of scaling the premiums. It might do to scale the managers' fees or per diem, but not the premiums.

I would suggest that courtesy be exhibited on every hand. Every man connected with the management of a fair should be a gentleman, and he should by all means show courtesy in connection with the county fair. And not only should the management be courteous, but they should exact the utmost courtesy from every employe. Sometimes when a man is placed at the gate he feels as important as he would if he were in command of the Japanese army about this time. People are often made angry by these employes and will not return the following year.

Of course we all know that mistakes are made in connection with the management; but the mistakes of managers often ante-date the fair. The directors sometimes meet and elect managers that are not at all com-

petent. A man of this kind will probably think he knows more about fairs than he really does, and so there is trouble right from the start. Every board of fair managers should, upon their election, take the receipts of the preceding year and then fix their expense accounts in accordance with the minimum receipts of the previous fair. If they do that they will never be out of pocket, and they will often have money left to repair the buildings and decorate the grounds. Often men are made managers of fairs who never give a thought to that business until the time comes to begin operations, and they never once think then of there being a bottom to the basket. They spend right and left, and when they come to count up after the fair is over they find their accounts several thousand dollars on the wrong side of the ledger.

It is also a mistake for the fair management to get too far away from the original agricultural idea. A fair that devotes all its time to the race-course is not an agricultural fair; and a fair that has receipts of seventeen hundred dollars and gives premiums to the amount of twenty-eight hundred dollars will be in a bad condition. As the gentleman who preceded me said, the premiums offered in the agricultural department are not as large as they should be. It is a mistake for any fair management to neglect the agricultural interests. I believe the largest premiums should be offered in the department of farm work. If you do that you will interest a larger class of men, you will extend the interest over a larger territory, and the result will be you will have more interest in the fair.

It is a mistake for managements to countenance any exhibition on the ground that is of a questionable character. It is a mistake to allow upon any fair ground any apparatus for the purpose of gambling: I have heard managers say, "Why, hieronymus will pay us eighteen hundred dollars a year!" What if it does? It is a mistake to allow anything of that kind on the grounds. All such things should be discouraged. I know that if you are looking at the fair through financial spectacles you will consider that these things bring greater revenue than anything else, but you will be making a mistake if you allow them to run.

It is a mistake for a management to offer sectional prizes or prizes for the people of any particular community. There are not many fairs than can offer two lines of awards, one for the foreign exhibitors and one for the home exhibitors. They usually have not the financial ability to do it. Even the State Fair, I think, should not attempt that. But I would open the exhibits for everybody; I would open them to the world. What difference does it make to the persons who go to the fair to look at the exhibits? What the people want to see is the best that can be produced. There are not many counties in this State in which people are not living who can be encouraged by coming in competition with the people from the outside.

Then I think it is a mistake for a board of managers to neglect their grounds. There is nothing so enticing to a visitor from a distance as beautiful, well-kept fair grounds. It would not hurt the fair managers to go out in the springtime and plant flowers and try to improve the grounds. That will attract people much quicker than grounds where there is nothing but mud or dust and no shade.

Professor Skinner: I think sometimes we forget that there are a great many exhibitors who are not able to compete with the man who is able to go to St. Louis to show his cattle, and many times we cut out the young men who would bring out herds that are of as much importance to that county as the herd that goes to St. Louis. I think anything we can do to encourage our young men to come out and exhibit in competition with their neighbors is a good thing. I remember one place where I judged eleven herds that were not fit for the higher shows of the State or for the larger exhibitions. The people who exhibited them did not have the time to make them fit for such exhibitions, but they did want to bring them out and exhibit in competition with their neighbors.

Mr. McDonald: I believe one very important fact has been overlooked in this discussion—the individual who goes to the fair. The people who go to the fair form a very important part in fair management. The gates should not be overlooked. As I said this morning, I believe in the educational features of fairs and exhibits. I am a democrat, and I believe in democratic principles; but I should like to amend my ideas about subsidies and get on the republican proposition long enough to advocate subsidies for fairs in order to get them on the high plane suggested by the gentleman who preceded me. I believe the people who sometimes boast of having successful fairs are the ones who gather in the directors' room at the close of the fair and congratulate themselves on the fact that they have had the largest number of entries known in the history of the fair, that the buildings were filled and that, on the whole, it was the greatest exhibition they ever had. About that time the secretary may say, "Gentlemen, how about the premiums? It is true we have had a great fair from an educational and from other points of view, but what is the matter with the gates?" I believe in paying premiums, but it takes money to do it, and that money must come from the gates or it must be raised by the directors.

I think we should look carefully after the exhibits and see that nothing that is degrading to the young of the community is allowed on the grounds. However, amusements must be furnished for all fairs. You must attract people to your gates and impel them to go down into their pockets and dig up the coin of the realm. That will give you something with which to pay your premiums. In common with nearly every man, woman and child that attended the St. Louis Fair, I went down the Pike.

I believe that was one of the most popular parts of the great exposition. I believe it brought in the largest amount of money of any part of the institution. I believe without the Pike the exposition would have been a greater financial failure than it was. That does not prove, however, that a Pike for a county or State fair would be a good thing. I don't believe the Indiana State fair needs a Pike. Indianapolis is Pike enough for the State fair. Any stranger who comes here to attend the State fair can find all the attractions of the Pike, and a great many more, in our capital city.

The way to make a fair a success is to interest the people of the locality, interest business men, manufacturers and merchants as well as the farmers. You will have to bring all classes of people through your gates, because you need their money, and the way to get it is at the gate.

There is one place in Indiana whose people I wish to congratulate. I read in the papers recently that the County Council of Porter County had appropriated four thousand dollars to fix up the county fair grounds, to erect new buildings and to put things in good shape generally. I think we ought to get a picture of that county council and a picture of that fair ground and make it one of the attractions of every county fair.

SOME OF THE BEST MEANS FOR ADVERTISING FAIRS.

W. M. BLACKSTOCK.

As a general rule county or State fairs are more or less successful in proportion as they are properly advertised. In their management a large amount of publicity is always necessary. They are wholly dependent upon popular patronage, and this patronage can only come by public solicitation.

Ticket sales and privilege sales are the only sources of revenue where-with to meet expenses and premiums; and while a large attendance is always desired, yet the receipts at the gate are often a matter of disappointment. Frequently good meetings are poorly attended, while those of lesser value are more popular because their managers are more skilful and have more adroit methods of drawing the crowd. Certainly very many of the failures in this line of work come from lack of proper businesslike advertisement.

An agricultural or mechanical fair is unlike any other business. It needs peculiar treatment to be successful. Fairs are public benefit institutions for the development of social and commercial conditions common to the whole community. Consequently the end and purpose of fair advertising is not merely to publish a cut-and-dried program, but also to further

explain its details in such a public manner that the community shall become interested and actively engaged in the preparation of their best specimens of hand and brain work for the coming prize contests. Whenever you can get everybody thinking about the fair and talking about it, then, and then only, is your meeting well advertised.

Therefore fair managers should always have the public good in mind. Their plans should be worthy of public confidence. To gain this confidence the first prerequisite is intelligent organization and honest administration. These of themselves are good advertisers. The next active step begins with the premium list. If well prepared, this is the very best possible advertising medium, but, if awkwardly arranged and printed on bad paper, indicative of careless preparation, the effect is not good. A bad catalogue is a handicap to the meeting it represents.

The magazines that are read today are all made up in the best style known to the printer's art so as to attract attention. In like manner the fair catalogues that are destined for the library table and to be read attentively should be in good form and readable publications. The prizes may not be large, but the classification of prize items should be carefully considered. Special prizes for home productions and for the work of the children of the vicinity should be offered, hoping thereby to awaken their attention and self-interest. No local industry should be overlooked. All branches of mechanic arts that are known in the country should have a place at the fair. In former years Indiana was an exclusive agricultural State, yet now about one-half of her population are engaged in other pursuits, hence the mechanical industries should have full recognition, so that all the people from the factory can meet their neighbors from the farm at the fair.

The premium list should have an educational effect. Its classification of exhibits should be in accordance with the best authorities on scientific production. These lists should have a wide circulation. As far as possible a copy should be in every home, so that the old and the young shall each become familiar with its contents, for in my observation there is no better means of advertisement than a good premium list and the reading matter this book should naturally contain. Also, it must be conceded that in nearly every instance the exhibits are the most valuable part of the show. The amusement features of fairs are only incidental, and side shows usually do their own advertising.

The relative merits of side shows and other exhibits as competitive attractions was illustrated at the recent World's Fair, in which nearly every amusement concessioner lost money. The Pike was well advertised, but the twenty millions of visitors went to St. Louis to study the objects of art and handicraft in the industrial buildings, caring but little for the Pike.

The most successful fairs are those that are fitted to the natural conditions of the locality in which they are held, and the particular

scheme for advertising each meeting must be adapted accordingly. For instance, the late International Live Stock Exhibition at Chicago had nothing whatever by way of amusements. No diversion of any kind was observed in the big show except the music of a single brass band. Nothing else was needed. The people went to see the exhibits only—anything else of a diverting nature at that time and place would have been a seeming impertinence. Yet at a county fair in the midst of a rural population, far away from the large cities, the amusement idea is highly proper. It is just what the people need. Their fair should be a great annual hand-shaking picnic, a general holiday event. Furthermore, the interchange of business experiences in conversations about crops or live stock along the lines of the limited exhibits which the neighborhood may afford at such fairs are always profitable and mutually educational. Each meeting must fit its environment and be so advertised.

Aside from a thoroughly revised premium list, the best means of reaching the masses is through the daily papers. A few selected lithographs to catch the eyes of the passing travelers are necessary, yet the majority of persons are more influenced by what they read than by impressions from flaming posters. This is an age of newspapers, and under our rural delivery system daily newspapers are read in nearly every home in Indiana. This means of publication is a grand opportunity for the managers to take the masses into their confidence. In carefully selected items, and edited articles bearing upon this question, everything connected therewith can be explained in an interesting manner, so as to arouse a patriotic spirit in favor of these time-honored institutions. The people should be so educated that they will feel a personal pride in the maintenance of their county and State fairs. Henceforth the power of the press can be made a valuable promoter of fair work, for the influence of a high-class, widely circulated newspaper is incalculable. Public opinion is largely made up of what the people read in papers and periodicals.

Only a small percentage of the people of Indiana really appreciate the full importance of these exhibitions. They do not know that industrial fairs are recognized all over the civilized world by the highest authorities of those countries, and for hundreds of years, as the greatest of all agencies for the development of domestic industry.

As an educator and an inspiration, there is nothing equal to the competitive exhibitions of well classified, well conducted show rings. This fact is recognized by all the agricultural colleges of this country. The scientific principles involved in scoring and judging exhibits is a matter of expert class study in the schools, and the people of this country, including some fair managers, need to be awakened to a higher appreciation of this good work.

All advertisements should be truthful. Fake notices are damaging to their publishers. There is a mistaken idea in the minds of some people

that the American people like to be humbugged, but it is not true. Strangers of the show people class may perpetrate frauds with success, but resident fair managers can not win favor on false issues. They must deal honestly and honorably with their patrons in everything they advertise.

Indiana has two kinds of fairs, viz.: Those under either private or public ownership. The first class includes all those associations wherein the lands are owned by the stockholders. In the other class the fair grounds are owned by the counties and held under lease for fair purposes only, and liable to forfeiture. Now these conditions materially affect the advertising. Of the first instance the meetings at Elwood, Crawfordsville and other points are examples. In these associations every stockholder has a permanent investment from which he expects dividends and in case of dissolution a profit from the sale of the real estate. Consequently each stockholder has a moneyed incentive to make his meeting a financial success. These meetings are usually well advertised, because each individual stockholder is an active agent in his own interest and is always saying something to popularize his fair.

But of the other class where no dividends are expected, and where all net profits are invested in buildings upon leased lands which upon failure or abandonment will revert to the county, the stockholders have no incentive for aggressive action other than a patriotic purpose to assist in a public educational enterprise, and as a matter of fact in this latter class of corporations many stockholders lose their enthusiasm and drop out of this public service, leaving the burden of advertising wholly upon the few officers in charge.

In the interest of this latter class of meetings, this paper is written and the foregoing suggestions may be briefly stated thus: Get a large number of reputable people into your organization. Administer its affairs wisely. Revise your catalogue thoroughly. Post a few large bills and a great many smaller ones, and then contribute your best persuasive influence through the editorial columns of the newspapers and your fair will be well advertised.

Mr. Mitchell: Mr. Blackstock said that Indiana was formerly an agricultural State. That would convey the idea that it is not now an agricultural State. While the manufacturing industries of the State have grown, Indiana has lost nothing in agricultural growth.

Mr. Blackstock: I see your point and acknowledge it is a good one. I meant that it was formerly exclusively an agricultural State. Forty years ago nearly everything manufactured came from the East and the State was exclusively an agricultural State. That is not the case now. I did not mean, however, to convey the idea that agriculture was declining in the State, because it is not.

Secretary Downing: I don't think there is much room for discussion on Mr. Blackstock's paper, but I would like to emphasize one feature of it, and that is the value of newspaper advertising. I have got to the point where I believe fairs ought to be advertised in the newspapers exclusively. I think the day of posters and lithographs has passed and gone. That used to be effective before newspaper reading became so general, before rural routes were established all over the country; but in this day and age we can, I think, rely wholly and solely upon newspaper advertising. If I had my way about the matter I would eliminate all posters and lithographs from the advertising list; especially in view of what the circus people have done recently. The circus people have arrived at the conclusion that it is a useless expense to spend so much money in large, flaming posters and bills; and I see from the papers they have agreed not to use any of that kind of paper in the future. I think that is all right. A man who has not time to read the newspaper has not time to hunt up a billboard when he wants to know what is going on.

In going over our expense account I find we have been expending for the past ten years about three or four thousand dollars yearly for posters and lithographs and about a thousand dollars for newspaper advertising. This last year I cut down the billposter's list about a thousand dollars and added that to the newspaper advertising account. I found it very much more effective. The results seem to bear me out in that. Everybody talked about the State fair this year because everybody read the newspapers. I feel sure I am right in my point of view. I have never heard of a man who wanted to see what was going on at the theaters who would, after he had gone home in the evening, put on his rubber boots and his overcoat and go out on the streets to get that information from the posters. He always digs up the newspapers, looks through the amusement columns and reads the criticisms of the plays. I know I do that; I never think of looking at a billboard to find out what is going at the theaters. I think that is true of fair advertising. There is a hardly a place in the State where the people can not be reached by newspapers. In my county, with a population of from twenty-five to twenty-eight thousand, nearly every home is reached by one of the three newspapers published in Hancock County. If that is so, and if you get your advertising matter in the papers in good shape, everybody is bound to see it. People who come to the city on trolley lines these days do not stop at the cross roads to see what is posted there; they do not stop long enough when they are driving into town to see what is posted there. They drive into town, get their newspapers, take them home and read them. They rely altogether upon the newspapers.

In advertising the State Fair I found it very advantageous to have a good press agent. We employ a press agent for a mere pittance, forty or fifty dollars a year. He begins the work about four or five weeks before the fair. We furnish him material for his write-ups, and he gets the

matter into the newspapers here. He can get it into the newspapers in the form of reading matter when we can not begin to get it there. We employ a regular reporter on one of the papers who has access to all the newspapers. He prepares these slips and presents them at the office. They are taken to the managing editor or editor-in-chief, looked over, and if the article is in the form of news it goes in without any charge to us. We get very effective advertising in that way. Of course we must patronize the papers with advertisements, for which we pay. We spend about \$125 with each of the papers here. Then we have a list of seventy-five or eighty papers with which we spend from three to five dollars each. They print these slips for us. We send them out already prepared. These articles are read in country places where we could not possibly reach the people with billboards or posters. Newspaper advertising is the most effective advertising we can do. The money we are spending for lithographs and billboards I think is almost thrown away. I think the day is fast coming when we will have to resort altogether to the newspapers to advertise our fairs.

Mr. Blackstock: Our fair has been in the habit of investing one hundred, one hundred and twenty-five, and sometimes as high as two hundred dollars in lithographs. When they were distributed over the county you could only see one occasionally. If Buffalo Bill's show happened to be coming about the same time they would put in two or three thousand dollars' worth of posters, and our little bills would be lost sight of. You can not advertise fairs in competition with such shows, for it belittles the interests of the fairs. If I were secretary of a fair I would not buy a single poster; I would put what money I had into newspaper advertising, as Mr. Downing has suggested.

Mr. Hulet: I have been advertising fairs for the past seven or eight years, and each year I have spent less and less money on lithographs and posters. I have used the newspapers to advertise in more and more as the years have gone on. I have been afraid, however, to abandon the poster advertising entirely, not knowing what the result would be. I have at each fair put out some posters, and have put out little fence stickers with only the date of the fair on them. The advertising that has counted, however, has been the newspaper advertising. We have some eleven newspapers in our county, and thirty days before the fair I had them filled each day with references to the fair. These went in as news items.

I believe in one fair advertising the next. If we have a good fair this year the exhibitors will advertise it for next year. If they have been well treated at one fair they will talk the year around about it, and will be sure to exhibit at the next. Then the only thing you have to get before the people the next year is the date for holding the fair. That you can get before them through the newspapers.

Dr. Myers: We had a successful fair at Fort Wayne last year. I think fairs can be advertised entirely through the newspapers, and this advertising can be done cheaper than by the billboards. We had a number of local items in the papers every day, and they cost us nothing. We spent about fifty dollars with each paper in the city, and averaged from three to five dollars with each of about forty country papers in that part of the State. We had some large posters, but most of the advertising was done through the newspapers. It was my first year as secretary of the fair, and at the close of the fair we were four thousand dollars ahead. The year prior the fair was forty-three hundred dollars behind.

We had a Pike at our fair, and one attractive feature was the stock parade. We had that every day at 1 o'clock. We did not confine ourselves to local exhibitors, but encouraged all the big breeders and importers to show their stock there.

I had the pleasure last month of meeting with the Ohio State Fair Board of Managers. Every one of the secretaries present said they had educational exhibits. They recommended that feature highly. Some of them said they began with a very small space for that exhibit, but now they have the very nicest buildings on the ground for their educational exhibits. They say that is a good advertisement. Every child is expected to have an exhibit at the county fair, and every child that has an exhibit there will surely draw three or four of his own family there to see it. They claimed that through that feature they largely increased their general admissions.

President Insley: The next order of business is the election of officers.

Mr. Wallace: I do not think it is out of place for me, as one of the younger members of this Board, to suggest to you the name of the man who occupies, I believe, the most important position on our Board. We have listened to a very interesting discussion of the attractions that should be allowed at fairs. I want to nominate for President of this Association Mr. H. L. Nowlin, the man who has charge of our department of privileges. He is one of the most practical fair managers we have on our Board.

Mr. Clore: I had intended to place in nomination for the office of President of this Association a man who undoubtedly needs the sympathy of this organization, and who certainly needs some recognition—Mr. W. E. McDonald.

Mr. McDonald: I am a Democrat, but I am not looking for office. It is not fashionable nowadays for Democrats to be in office. I beg to decline.

Mr. Blackstock: I second the nomination of Mr. Nowlin.

There being no further nominations for President, Mr. Nowlin was elected by acclamation.

Mr. Hulet, Crawfordsville, was elected Secretary.

The meeting was then adjourned sine die.

FIRST ANNUAL REPORT

OF THE

Indiana Live Stock Breeders' Association.

At the 1904 meeting of the Indiana Industrial Association a call was extended to the various live stock organizations to appoint three members each as committees to meet together and consider the organization of a State Live Stock Breeders' Association which would have for its object the promotion of live stock interests in Indiana. The following associations responded to the call:

State Board of Agriculture, Short Horn Breeders, Angus Breeders, Indiana Swine Breeders, Hereford Breeders, and Wool Growers. After a thorough discussion of the feasibility and possibilities of such an organization it was decided to organize a State Breeders' Association, the business of which should be conducted by a board of directors to be composed of three members from each of the various breeders' associations represented in the committee. After the election of officers the secretary was instructed to prepare and present at the first annual meeting a constitution and by-laws.

OFFICERS AND EXECUTIVE COMMITTEE FOR 1904.

President—Will S. Robbins.....	Horace
Vice President—Joe Cunningham.....	Peru
Secretary—J. H. Skinner.....	Lafayette
Treasurer—J. L. Thompson.....	Gas City
Executive Committee—W. J. Becket.....	Indianapolis

DIRECTORS.

State Board—Joe Cunningham, Peru; Oscar Hadley, Danville; David Wallace, Indianapolis.

Swine Breeders—Ed Hodson, Anderson; Frank Moore, Rochester; W. O. Canaday, Frankton.

Short Horn Breeders—W. S. Robbins, Horace; J. M. Donnelly, Anderson; Tom Christian, Indianapolis.

Angus Breeders—George Henderson, Lebanon; William Avery, Waldron; W. J. Becket, Indianapolis.

Hereford Breeders—Clem Graves, Bunker Hill; C. E. Amsden, Shelbyville; W. C. Hauelsen, Indianapolis.

Wool Growers—J. L. Thompson, Gas City.

The purpose of this Association is:

1. Not to do away with existing breeders' associations; but
2. To unite them in a common cause;
3. To give them better standing and greater influence in furthering live stock interests;
4. To secure the best authorities in the United States to discuss topics of vital importance and interest to all breeders and feeders at the annual meeting;
5. To bring breeders in contact with one another and promote good fellowship among them;
6. To encourage young men in the live stock business;
7. To give breeders influence with State and National legislative bodies, that needed legislation and appropriations for live stock interest may be secured.

CONSTITUTION AND BY-LAWS OF THE INDIANA LIVE STOCK BREEDERS' ASSOCIATION.

Article I. This Association shall be known as The Indiana Live Stock Breeders' Association.

Article II. The object of this Association shall be to promote live stock breeding and feeding, and general improvement in the herds and flocks of the State, as well as unite live stock men in a common cause.

Article III. The business of this Association shall be conducted by a Board of Directors, which shall be composed of three members from each of the various breeders' associations represented in the organization and elected or appointed by them for a period of three years.

Sec. 2. The majority of the members of the Board of Directors shall constitute a quorum for the transaction of business for the Association.

Sec. 3. This board from its own members shall elect a President, Vice-President, Secretary, Treasurer and one Executive Committeeman, each from a different live stock association, who shall appoint such committees as they may deem advisable to further the ends of the Association.

Sec. 4. The Executive Committee shall consist of the President, Vice-President, Secretary, Treasurer and one other elected by the Board of Directors from their own number.

Article IV. It shall be the duty of the President to preside at all meetings of the Association; to enforce the observance of the constitution, by-laws and rules of order.

Sec. 2. It shall be the duty of the Vice-President to preside at all times when the President is absent, and perform the duties of the President.

Sec. 3. The Secretary shall keep a record of the members and proceedings, receive and make record of all money paid in, conduct all correspondence of the Association, and present a report of the plans and proceedings of the Association at the annual meeting.

Sec. 4. The Treasurer shall keep all moneys belonging to the Association, and disburse the same under the direction of the Association and according to its laws. He shall present for approval each year at the annual meeting a report of all money collected and disbursed, together with all obligations and claims of the Association.

Article V. All elections of officers shall be by ballot, and shall be held at the regular annual business meeting, at such time and place as the Board of Directors shall designate, after due notice has been given. The term of office shall commence immediately after the annual meeting, to continue for one year or until others are elected to fill their places. In case of a vacancy occurring in any office, the Board of Directors shall proceed to an election to fill the vacancy at the first session of the board.

Article VI. Any person interested in the feeding and breeding of pure bred or grade stock or in the promotion of live stock interests in the State may become a member of the Association for one year by the payment of \$1 to the Secretary, who shall give a receipt for same.

Article VII. The constitution may be amended with the approval of two-thirds of the members present at the annual meeting of the Association. Any proposed amendment, addition or repeal must first be approved by the Board of Directors.

BY-LAWS.

Article I. Meetings of the Association shall be of such length and character as the Board of Directors shall agree upon, and shall be held annually the first Thursday after the first Monday in January, for the purpose of considering any business that may come before the Association, and discussing such topics as may be deemed advisable to further its ends.

Sec. 2. The President shall have the power to call a special meeting of the Directors at such time as, in his judgment, the affairs of the Association demand.

Sec. 3. All bills incurred by the Association shall be approved by the Secretary previous to payment by the Treasurer. The Treasurer shall show receipts for all money paid out.

Sec. 4. The program committee, through the Secretary, shall prepare a program for the annual meeting and arrange the details for its rendering.

PROGRAM.

Thursday Morning, January 5, 1905.

- 9:00 a. m. Meeting of Directors.
- 10:30 a. m. Address—"Co-operation Among Live Stock Breeders," Fred H. Rankin, Secretary Illinois Live Stock Breeders' Association, Urbana, Ill.
- 11:00 a. m. Business Session.
"The Indiana Association, Object, Plans, Etc.," J. H. Skinner, Lafayette, Ind.

The meeting will also be addressed by Ex-Senator W. A. Harris and others.

All live stock breeders and feeders are invited to attend the meeting, and to become members.

FIRST ANNUAL MEETING INDIANA LIVE STOCK BREEDERS' ASSOCIATION.

The first annual meeting of the Indiana Live Stock Breeders' Association was called together at the State House, Indianapolis, Indiana, on January 5, at 11 a. m., with President Will Robbins, of Horace, in the chair.

President Robbins: We have with us to-day Mr. Fred Rankin. Many of you know him personally, and perhaps all of you know him by reputation. He has kindly agreed to come over here and tell us what he knows about certain things in which we are very much interested. I have the pleasure, gentlemen, of introducing to you Mr. Fred Rankin, of the University of Illinois, Secretary of the Illinois Live Stock Breeders' Association, who will speak to you upon the subject: "Co-operation Among Agricultural Organizations."

Mr. Fred Rankin: Mr. Chairman and Gentlemen of the Indiana Live Stock Breeders' Association:

If agricultural advancement has been rapid in the immediate past, it will not be less rapid in the immediate future. We are in the midst of the movement, and a thousand new questions and readjustments are up for settlement simply because agriculture is assuming new proportions on the earth and entering into new relations among the affairs of men.

Conditions are unusually favorable just now for extreme development in agriculture. There is great public interest in the matter; governments, state and national, are committed to the policy of public aid to this end; the educational spirit of the times is in sympathy with industrial and practical training. "Learn to do by doing" is the American

motto, and there has never been a time and may never be another so favorable for developing American agriculture to its highest possible estate.

Agriculture can not be capitalized like mining or manufacture, and its development must therefore depend upon organized public effort. This fact is now well recognized and the most immediate question to be determined now is, who shall lead in this business of the further development of American agriculture?

Great movements do not rise spontaneously and conduct themselves to successful conclusions. There must be leadership and rational direction, and the practical question before us all just now is the proper management of this wave of energy and spirit of progress in such a way that it shall not spend itself without accomplishing its full and perfect work.

Now, I know that in a case like this the tendency is to pray for a Moses or a Joshua to lead us. But I do not believe it will ever be done that way.

With the present popular interest in agriculture, champions will not be wanting. The larger question is, Who of all those interested in agriculture is best fitted to walk at the head of the procession and carry the flag? Who shall assume the privileges and accept the duties of leadership; and who by common consent shall be considered as directing this great movement for better agriculture? Shall it be the agricultural press, which is the exponent of agricultural thought? Shall it be the colleges of agriculture, which instruct in advanced ideas? Shall it be the experiment stations, which are the sources of new discoveries? Shall it be the politicians, who make our laws? Or shall it be the farmers themselves, who live by agriculture? Or shall it be individuals, institutions, or associations?

Let us see whose business it is to accept the responsibility of leadership.

We all know the power of the press in molding public sentiment, in teaching wholesome doctrines, in correcting or causing correction of evils both public and private. Is there a more potent power than this to lead in this great work?

We are not unmindful of the great educational value of annual shows, from the county fair, bringing together the best of local productions, up to the district and State fairs and to the great national and international expositions. All are educators in the best and highest sense of the term and bring together an illustrative collection that puts to shame our latest individual effort, and the marvel always is, what will the next be like. But there are other forces to be considered.

We have at least one college in every State whose special business it is to teach the best that has yet been discovered regarding agricultural practice. Surely here is a force that must be well to the front and a safe exponent of the highest standards. It is easy to see and maintain

the position that nowhere else on earth are standards so safe as here, where trained men give their lives to the careful study of human experience in the line of scientific knowledge; not only that, but every one of these colleges is connected with an experiment station, provided with funds and trained investigators for further research into unknown fields. Can it be possible that anywhere else there is a force at work so potent as the college and station for the conservative yet rapid development of this great industry?

And yet it seems to me that we have all along overlooked the ultimate object that must be reckoned with. To no other force or individual does agriculture appeal with such tremendous significance as to the man who earns his own bread and butter and supports the life of his family by what he is able to get out of the soil. He knows agricultural conditions as no one else can know them. It is bone, blood and shew to him, and I submit the proposition that agriculture has a deeper meaning to this man that lives upon the land by the labor of his hand and brain than it can possibly have to any other man on earth; and, therefore, not the press, able and powerful though it is; not the great exposition, successful though it may be as a public educator; not the college, whose business it is to teach the young, nor the experiment station, even though it may extend the boundaries of knowledge far beyond anything attainable by the individual farmer—it is none of these that shall lead the procession that is working for the development of agriculture, but it is the farmer himself, the man who gets his living from the land, the man who walks upon the earth; it is he who realizes as no other man can realize that all flesh is grass. The responsibility is his and he must accept it. No matter what the press may print, no matter what the colleges may teach, or stations learn, or the expositions exhibit, nothing can be really accomplished until this man living upon the land shall put it into actual operation; this man who is, and from the nature of the case must be, at once the beginning and the end of all real advancement. He is the Alpha and Omega of the whole matter.

But this individual farmer is equal to the task; there is not enough of him; his experience is too limited; he may be a fruit grower only, or possibly a cattle producer, and he may spend his life in developing a new kind of strawberry, or a better method of feeding. Therefore, to be effective this individual farmer must be taken collectively and when organized into an association, such as this, there is nothing he can not accomplish.

Gentlemen, if any problem in agriculture is now clear to me it is this: That upon associations like yours rests the exclusive responsibility of leadership in the development of agriculture. It is saying nothing against the agricultural press, the exposition, the college, the station or any other of the forces that must labor and whose laborers are all needed for the final accomplishment of the purpose—it is saying nothing against any of

all these, but it maintains the proposition that leadership is to be by associations such as are here represented. Clearly no other force is so competent to assume this leadership; and to me no other problem in agriculture is so clearly solved as this—that the various agricultural associations representing the united powers of the men of the State most representative of agriculture—these must accept the responsibility of the leadership, each in its own line. Of all the forces that shall contribute to the betterment of this particular branch of agriculture, the improved live stock breeders' associations should take the initiative in everything that will better the industry. There are some things the associations can not do, and these things must be otherwise provided for. For example, your Live Stock Breeders' Association can not publish a paper. I do not think it ought—it is not a machine that will work well in that capacity. I do not think it ought to hold a fair, because it could not be as successful as other and broader organizations, such as your State Board of Agriculture, have been. I do not think a live stock breeders' association should conduct a college or even an experiment station, even if it had the available funds, but it should see to it that these forces are set in operation and that their activities are bestowed in regular and orderly manner, and in such a way as will most rapidly advance the live stock interests.

In maintaining the position that agricultural associations should accept the responsibility of leadership of all movements tending to uplift and advance the agriculture of the State I do not forget nor would I minimize the work of any element of this progress. The agricultural press has a work that no other force can accomplish; so it is with the exposition, the college and the experiment station. These many activities are not conflicting, but supplementary each to the other; but it is imperative for the best results that we all clearly understand and agree as to where leadership belongs.

Right or wrong, equal or unequal to the task as we may be, it is both the privilege and duty of farmers themselves to study the possibilities and needs of agriculture and to work in season and out of season for its most perfect development. It must be done when it is done, as the result of a common sentiment among progressive farmers. When a few scores or a few hundreds of thinking men begin to think alike and then perforce to act alike, and when it is done it is already put into the lives of the people and it lasts forever.

Last winter in Illinois the chairman of one of our organizations said before the appropriations committee, that was considering an item for agriculture investigation: "We do not ask this appropriation as a favor. We do not ask to put our hands in anybody's pocket. All we ask is to be allowed to put our hands in our own pockets and to take out some money for the benefit of our business."

That is a telling argument. No college or station or paper can talk that way, and when the money is voted upon considerations such as this

these representatives of the people will hold the associations responsible for results, and they ought.

The colleges, the stations, the fairs and the press are all educators, and we can not do without them, but they serve the people, while the associations are the people themselves. I would not say a word against the efficiency of the college and stations, the fairs or the press; far from that, they are powerful agencies of progress. They have been established and supported by the people to do each a particular thing. It is, therefore, for the people to sustain them. They may and should criticise them, make them better if they can, reorganize them if they must, but they must support them, and if they expect results they must support them well, for this business of advancing agriculture is an expensive business.

These agricultural organizations, therefore, are the typical representatives of the people in matters agricultural, and they can not if they would escape their responsibility. If agriculture is not developing as it should in Illinois, Indiana, or any other State, we may say the press is inefficient, the fairs badly managed, the college and the station lazy or incompetent—we may say all these things, and they may be true, but in the last analysis the agricultural organizations are chargeable for the conditions, and they can not shirk the responsibility.

These associations are chargeable with the conditions, whatever they are, because they represent presumably the foremost men in agriculture; they have effected organizations presumably to some purpose and they have taken names that carried with them inevitable responsibilities. They are responsible for conditions, whether good or bad, because in this country the people constitute the court of last resort, and right or wrong, we and everybody must abide the final verdict.

Because in this country the people are sovereign and they alone can say what shall and shall not be done, what taxes shall be levied and for what purposes, what new enterprises shall be undertaken and what shall be abandoned—for this reason, if for no other, a voluntary association of the people, with a formal organization and a name, not only constitutes a power for work, but it accepts more responsibilities than can be laid on any public officer by the vote of his constituents.

But when a body of progressive farmers organize in the name of live stock, for example, they take upon themselves the duty as well as the privilege not only of supporting existing agencies for the advancement of this interest, but even of effecting reorganization and of instituting new agencies for this advancement.

You of these associations may be taught many things as individuals by college and station men, by editors and reporters, and they would not do their duty if they did not tell you things you had not known before. They may therefore contribute to your education and success in business; that is what you keep them for. They may advise, admonish, urge or persuade you as individuals or as an organization, but they can not dictate

what you shall do or what your policy shall be. They are dependent upon you and not you upon them. You may support them bountifully and encourage them to better exertions or you may crush the life out of them, and nobody but you will answer for it, because you hold the power you do, because you occupy the position you do. And I may add as a logical sequence, that whatever the efficiency or the lack of it in any agency calculated to uplift and promote agriculture, it is upon our agricultural organizations that shall rest the final verdict.

Among other things I believe that the agricultural organizations will see to it that the colleges and experiment stations, which are their special charge, shall receive adequate support, not only because it is their peculiar duty, but because it will pay. And when both our colleges and organizations shall more fully understand the natural dependence of one and the duty of the other, then we shall get on faster with agricultural development.

It is poor business policy to permit other people and other competing countries to know more of our resources and agricultural methods than we know ourselves, and yet that is exactly what we are doing. At the present time duly commissioned agents of four foreign governments, to wit: Germany, Belgium, Japan and Brazil, are traveling through our States studying live stock conditions. These experts applied to and were given letters of introduction from the Department of Live Stock of the Universal Exposition to stockmen in Indiana and other States, and when they shall have completed their investigations and made their reports, their governments and people will know more about our conditions than we ourselves. I hold this to be a bad policy—for us—and that it is poor economy to neglect or delay the closest study possible of the industrial conditions of this and other countries.

There is a future for live stock interests not yet dreamed of, and their future is very largely in the hands of your Association and will be what the live stock people make them. It is for you to say what shall be done, and how, and when. The future of your college and station is largely in your hands. You have made a splendid beginning; you have given to your agricultural college a splendid new building. Will you take the next step? I am confident you will not stop with a great building. Special appropriations for special purposes—that is the next step—the great principle that will bring about rapid and increased development in agriculture.

The activity of your college and experiment station and the usefulness of your State fair depends upon funds entirely. If there is available for the great work which these agencies may accomplish only what can be spared out of the appropriations from the general government and the gate receipts at the annual fair, the development will be slow indeed, but if the agricultural associations represented at this meeting see the need of spreading out upon the broader plain of aggressive development and see to it that means are provided, your college and station and State fair can

do a great and helpful work. One that will be substantial advantage to the individual stock man and to the State at large. No other interest means quite so much to the State as her live stock, because not only agricultural values, but all others, are greatly enhanced thereby, and because it is the only practical way of maintaining the fertility of the land. These interests are yet only in their infancy. Indiana is not only the center of population, but is also the center of what is by nature the greatest live stock region in the world. The greatest and cheapest of feeds—Indian corn—flourishes here as nowhere else on earth, unless it be across the line in Illinois, and the proper destiny of corn is to make meat. It seems to me that to sell this corn of ours in the rough for another to feed, to fill another man's pockets and to enrich another's possessions is an agricultural crime. Indiana should raise more and better live stock. We have the lands, the feed and the brains to do it. All that we lack is the information well diffused among the stockmen, but this information is within the reach of any live stock community in the world that has the energy and persistence to get it and to use it.

I believe that our sister States should lead in a most serious and systematic study of this great subject. We must remember that what is done or not done rests substantially with this and similar associations, because they officially represent the live stock interests. What you say should be done, will be done.

The money that goes into the development of industries is about the only taxes that ever return a revenue. You ask, will it pay? I would say that there is no question that money devoted to investigation pays and pays immediately. Will it increase taxes? Well, yes, it will somewhat. Illinois two years ago decided to put \$50,000 a year into the education of her young men in agriculture in addition to her experimental work. Now, that was a little less than \$1.00 for every square mile of Illinois territory, it was less than \$0.01 for each six acres of land, less than a nubbins of corn to an acre of ground; and the speaker has yet to find the first man who is not willing to give that nubbins to the education of young men in practical agriculture.

There is another way in which we find that co-operation is helping Illinois agricultural associations. In addition to the regular program, consisting of addresses and discussions, we always hold sessions devoted to the judging of different specimens of live stock, where the animals are used as object lessons. Reasons are given, explanations made, and questions answered in regard to all points under consideration. The subject of good breeding and correct feeding is intelligently and profitably considered. Last year we held a meat cutting and judging demonstration. There were over 500 people in attendance at this session. How many of the average stockmen or boys upon the farm have an opportunity to study typical specimens of the various classes and market grades of live stock and to have their characteristics pointed out by experts?

I know that some are saying, "Let him attend the fairs, that is what they are for—to teach the people." Have any of you ever considered the actual condition of an average young man, not a breeder, at our great live stock expositions? He is just beginning, we will suppose, or in any event, he realizes his deficiencies and has come to learn.

This friend of ours at the fair, he looks in vain for specimens illustrating market classes—for exhibits representing the market end of the live stock business. He sees fine specimens of pure bred animals—under blankets. He discovers one uncovered and a number of interested parties standing about evidently examining it as an interesting specimen. Being eager to learn, he edges up to it a point or two; everybody is looking wise and saying little—or nothing. Shortly he ventures a question—of course it is an awkward question, but it is an honest one, from a questioner who doesn't know that it is an awkward place for questions and that almost anything pointed is out of order. In any event his question is certain to express his fundamental ignorance. They were debating, each in his own mind, weighty and delicate questions. He does not belong in their class, and they know it, and his questions prove it, and he knows it—now, so that the answer he gets, while not intended as a rebuff, serves as such, and he soon learns wisdom by experience and keeps still.

He thinks perchance to fare better with an attendant and gain some information through him. Vain hope. He may learn some day that it is one of the high arts to get anything valuable out of an attendant.

But surely this seeker after knowledge, this neophyte who goes about expressing his ignorance, hungry for the very crumbs of knowledge, surely he will fare better at the show ring. Not very much better. He sees perhaps the finest specimens of many breeds—different attempts under different conditions to meet needs that stand out clearly defined in the minds of great breeders, but that to him have barely an existence with the most hazy outlines.

He sees the judging going on from a distance. He can not get close enough to the animals to study them, if he knew how. He sees the ribbons tied and knows that a decision has been reached, but it means nothing to him. He saw that the judge was in a brown study. What was he thinking about? What comparison was he making? He would really like to know, but nobody ever will know all that was passing through the judge's mind—the nice discernment to detect good and bad, the keen judgment to weigh relative values and the diplomatic considerations that went to make up the decision. These are the really valuable elements of the show, but they are a part of the machinery and not of the show. So this man goes home feeling that he has seen some great animals, but their connection with market demands, or with his affairs, is yet a puzzle to him, and he does not know, and will never learn in this way what constitute the distinguishing characteristics of either market classes or the different breeds.

Now, no such amount of mystery should surround this matter. This man ought to be able to get before an animal that represents a market type or breed, and somebody ought to be there to tell him why it is a representative animal and to point out the typical characteristics. The knowledge this man seeks is not particularly difficult of acquirement if only the conditions are favorable. I am perfectly well aware that this audience will say that the picture is overdrawn. I tell you it is not overdrawn. I have seen these people by the dozen, by the score, by the hundred. You whom I address are favored people. You can find out anything you really want to know about an animal, and so can I, now; but the time was when I was in exactly the condition I have pictured, and I know the predicament of this individual thoroughly well; and I know that this species is yet in existence in large numbers.

Now, I must not be misunderstood in this matter. What I have said is not in criticism of our fairs; it has been said to show that they are not and can not be educators of the public in all the matters they need to know. Live stock expositions are and must be for the exhibition of the choicest animals that human skill can breed. They will likely be pedigreed animals of the highest class, and they can not be indiscriminately handled by a curious mob. The judge can not be questioned even by those who would like to know what he is thinking about. He can not think aloud. He can not give all the reasons that prompted his decision. The reputation of whole herds is placed in his hands. Great interests are at stake that would suffer more by discussion than by defect in the showing. He must care for the interests of breeders, and the judge may not take advantage of his temporary position and turn teacher to the multitude. The mass of stockmen and young men must get their elementary information somewhere else, and with animals that mean less to their owners than do those shown at our great expositions. Naturally, then, the college comes to us as the proper institution for disseminating available knowledge and information among young breeders and farmers.

I might speak of the work which our association is doing in Illinois in co-operation with the station. We find that the closer we keep to our agricultural college people the better off we are. I have been connected with the college for four years, but all of the remainder of my life was spent on the farm, and I still manage my own farm, and I expect to return there soon. Four or five of our associations grouped together or pulled together and asked help for the experiment station. At the last Legislature we had an appropriation. Our association received \$25,000.00 for experimental work in the station; and another association \$25,000.00 for soil investigation; the dairy association, \$15,000.00; the corn growers, \$10,000.00—well, there was \$85,000.00 spent for experimental work and investigation along these lines. The work was controlled by the individual association—there were five members who constituted an advisory board or committee, who served for two years. The live stock people at

their annual meeting elected five members to serve as advisory members for two years and make plans for it. This whole thing was planned out by Professor Mumford in co-operation with five leading stockmen of Illinois. Our soil investigation committee took up their work on that line. Nine sub-stations in Illinois tested corn. We have two or three representatives of the college study actual conditions in regard to feeding cattle on the farm, and actual market conditions. They go around and take notes and keep records of the weights and gains and the food consumption. We are trying to bring the work of the college and the stations close to the farmers. The question is often asked of us as to whether the money is appropriated to the association or to the university. It is given to the university for the special purpose of extending different lines of investigation.

Now, I have spoken quite personally in regard to what we have done in our own State. We do not do this with a spirit of boastfulness. We are trying to bring ourselves up, and the people of Illinois feel personally responsible for the work we are doing. The organization stands for something. The people have assumed this responsibility and it is to be hoped that they will carry it out and follow it up. Now you have a class of representative, responsible men interested in this work who can accomplish anything they set about. I know your work will aid us and help us in Illinois.

Gentlemen, I thank you very much for your kind attention.

President Robbins: I am sure we have had a grand talk from Mr. Rankin, but just now our time is very limited. We will take perhaps five minutes, if anyone wishes to ask Mr. Rankin a question. He has pretty clearly shown us what we should do and it seems to me it is a pretty big job he has saddled onto us.

We have with us today Colonel Harris, of Chicago, and I am sure he is in a position to speak on co-operation among farmers and breeders. We will now give him a chance to say something along this line.

Colonel Harris: Mr. President and Gentlemen—My presence before you is entirely accidental. I came down here yesterday in order to make a little talk as a representative of the National Shorthorn Breeders' Association. Your Secretary wrote me that he would like to have me stay over and meet with you. I did not know exactly what topic would be discussed, but I am very glad that I could take advantage of the invitation, as it gives me an opportunity to hear your program, and especially as it gave me an opportunity to hear the paper, which was very able and very carefully thought out, and very well prepared, on the subject of organization.

I want to say to you now that I want to bring you down to earth. It is all well and proper to appeal to your pride and your intelligence. If you build up the agricultural interests of your State you must use every

power that is within you to advance your own interests in that line in the way of developing and improving the business. There is a sterner phase of the question and of affairs today that demand your most serious attention. You have only begun to consider this subject, and you must consider it seriously. You have got to fight the world, the flesh and the devil along other lines than self-improvement, and the greatest need of organization today, gentlemen, is to fight the enemy on the outside. I have been connected with the Shorthorn Breeders' Association for a great many years as director, etc., and in the last year I have been especially connected with them representing the interests of that great association. We have been meeting with the railroad men, with the ranchmen, packing house people, etc., trying to adjust strikes and everything of that kind, and I have a very acute sense of the attitude which the live stock interest takes toward the rest of the world.

I want to talk about the necessity of good, serious organization not only for education and improvement and development, but a fighting organization by which you can protect each other and your rights as people. I would like very much to see a change in the title of your organization. I believe it now is the Improved Live Stock Breeders' Association of the State of Indiana. Why not Live Stock Breeders' Association of Indiana? Isn't every man who feeds steers interested? Isn't every man that ships his cattle to market interested? Isn't every man who has a herd of grade cows or raises calves to sell, whether he feeds them himself or not, interested? Isn't a man interested whether he feeds his hogs or sheep on his farm or sells them to someone else to feed? What is the situation in the live stock interest? We have got to look at the conditions of this great enterprise. It is a stable business. It should not go along by fits and starts. As the little boy said, "God himself can not make a two-year-old steer in a minute." It is a matter of gradual produce. The production is comparatively stable. There are two great factors. These factors are the production and the ultimate consumption. It is stable in every essential way, and yet while in the market there is nothing so fluctuating as the price of live stock. It is up one week and the next away down, bringing as a consequence ruin and distress, as it is bringing to thousands and thousands who are connected with it. It is not alone between the consumer and the producer. First there stands the transportation companies who take it down to market; then the manufacturer is in the way; then comes the retail dealer, and the retail marketer, and finally it is retailed to the stock yard companies who constitute a step in this transfer from the producer to the consumer. We also have the commission men. We can not do without the transportation companies, of course, and we have no desire to do away with them, and they cannot do without us. Every business in the world depends upon agricultural prosperity. It would mean destruction to everything in this world if this were taken out. The last two years have been

years of war between all of these interests. The producers damn the railways, and the railways damn the packers; the packers damn the commission men, and they pass it on to the stock yard men; the railway men damn the producers and all the rest because they do not get just what they want. The commission man says that everyone is at fault except himself. The simple truth is that packers take advantage and create a monopoly and press the market up, and they do this to suit their own convenience, and so it goes. It is absolutely chaotic. This is certainly a disgrace to the twentieth century. The nineteenth century has been marked wonderfully by the creation and extension of the powers of the corporations. They are beginning to see, however, that they can not stand absolutely in defiance of the public will simply for the sole purpose of making money. They are permitted to exist because of the service they render to the public. The great packing houses are beginning to see that they can not occupy this position of antagonism, and all along the line there must be a change.

Last February I was unexpectedly put upon a committee of cattlemen from the West, chiefly to represent the Shorthorn Breeders' Association. We conferred with the leading railroad men in Chicago who operated lines northwest and southwest. It was the first time the matter had been presented in the way it was. We invited them to be present a day at one of our meetings; we also invited the packinghouse men and the live stock commission men, and I had the honor of presenting the case in behalf of the committee, and I told them the exact position and condition of things. We wanted to stand face to face with these men and see whether or not they were not honest enough and sincere enough to treat this matter upon the basis of mutual interest. We were all very much interested and that little meeting was very successful, and led to some very important results. We presented our grievances, which were—

First. Exorbitant charges in many cases;

Second. Inefficient service, and,

Third. The taking away of our contract rights.

These things are now adjusted as a result of that meeting. Many other complaints were also adjusted. We did not propose to give up any rights that we had; as a result of that meeting, and the results must be more or less satisfactory, I attended a great many meetings in the East and organized the Interstate Live Stock Growers' Association. We proposed to have some one judge as to the reasonableness of the rights. Mutual dependence was made manifest in every possible direction and a movement was put on foot for the reorganization of the National Live Stock Association. It has been in existence for a number of years. It represents the great range associations and many cattle growers' associations of the States west of the Mississippi. We have not yet been able to get in touch with the States east of the Mississippi so much as we

would like to be, simply because the States east of the Mississippi have had no organization. They, too, need to be reached. We must do this after we carry on the warfare west of the Mississippi.

Then came the President's message. I am glad to say I found more common sense in that message than anything I have heard for a number of years, and it seems to me he is with us right straight in this fight.

[Here Colonel Harris read the remarks supposed to have been made by President Ingalls, from the President's message to Congress.]

Now, the President of the United States and one of the greatest railway men in the country states what I have endeavored to show concerning this great live stock interest. Next week there will be held at Denver one of the greatest and most important meetings held in America or on American soil for many, many years. There has been a certain desire on the part of a great many concerned, principally Mr. Frank Hagerbarth, who was elected president of the National Live Stock Association, to make a change in that great organization, and it is absolutely necessary there should be live stock organizations in every State in the Union who can be in touch and be represented in the affairs of the organization, and the plan is given by Mr. Hagerbarth, who is a large ranch owner. He is interested in cattle shipping, to say nothing of other business. He has been spending months in going around seeing the most important railway men in the country. This is a great question, which should be settled upon the basis of mutual interest. Everyone has said that they are willing to do anything that will bring about a better understanding, with less friction; that it will help them, and that it will help us. He went to see the market houses, and was told by them that they would come out in the open and give them a square deal, and that they would put any necessary amount of money up to bring about this kind of an organization. They are tired of resting under the entire enmity of all the American people. They said to him: "We are doing a legitimate business and we can show it, and we propose to do what we can to bring about a betterment of conditions in the market." He has seen the presidents of the Union Stock Yards companies in Chicago and Kansas City, and was assured by them that they were in favor of better things. The National Live Stock Commission is only a committee to bring these things about. The great difficulty is on account of the unorganized side of the live stock industry all over the country. We must have organizations like these you are launching today, not only devoted to building up and improving the business, but to advance more intelligent and better methods and all these things, but you must legislate and conduct the affairs in connection with the outside world, and you must represent your people. You will find men interested in these things whom you might not expect to be interested. As Mr. Rankin has well said, you must not confine this to the men who have taken a little higher position in breeding the improved breeds. You must broaden out and

take any who are interested. What is the plan? The plan in reorganizing the live stock interests is to have everyone interested in it, in any way, shape or form, connected with it. And have the organization appoint a general committee of five or ten or eleven, whichever they like, and then this committee will appoint one man who will serve on the central or executive committee, and they will appoint a secretary or chairman, or both, and employ a sufficient force to make that central committee a bureau of information. With this to bring its influence to bear on the agricultural department it will extend its work in a great many directions. The truth of the matter is that this industry has been a little one-sided. It limped a little on the live stock leg. It has been doing a great deal for the farmers and grain growers and planters, but it has not yet quite reached what it ought to toward the live stock interests of the country. We should have a correct record kept in regard to live stock. There should be statistics kept. At the present time no one knows very much about this. We do not know whether we are coming out ahead or behind. The commission man does not know; no one knows. We want to bring about stability. When a man buys a steer for three and one-half cents per pound he wants to know with reasonable certainty that if he feeds it properly and attends to it properly he will get from five to five and a half cents, or whatever it may be. He wants to know with a reasonable degree of certainty what will be the outcome of the whole affair. A man would like to know what a cow will bring him in the course of a few years. At the present time no one knows anything about it. Now, this great central committee that I speak of will represent the railways, the packinghouses and this association, and when any question comes up it will be referred to the members of this special committee which represents these interests, and if it is possible for an adjustment by face-to-face, heart-to-heart talks, there will be this cause of friction removed. No one gives up any legal rights; no one gives up the right to appeal to the Interstate Commerce Commission; no one gives or says anything about the anti-trust law, but as intelligent, patriotic people living in the beginning of the greatest century the world has ever known, we want to see if we can not arrive at these things in a fairer, better, broader and more business-like manner and in a more American spirit.

Now, gentlemen, I am delighted to find that you are just organizing here. I want to say that this is just what should be done in every State in the Union. Next week at Denver appeals will be made on behalf of the live stock interests in every State, and appeals will be made to the live stock interests to get themselves shoulder to shoulder and prepare to act with intelligence, and elect representatives, and endeavor to bring about an adjustment of all these questions—all of these difficult questions. There are lots of them in the way. I anticipate a regular row from one end of next week to the other in attempting to settle the matters and

in attempting to arrive at a basis of understanding. Texas cattlemen are opposed to it. They have been fighting the railways through the Interstate Commerce Commission. They think they are almost on the verge of success. We would not stop a movement of that sort. They have been fighting the packinghouses. Neither would we stop that. We want an organization that will settle these questions in a more pleasant, a better, more intelligent manner. War is becoming unfashionable. It is going out of date, and arbitration is beginning to take its place, both nationally and individually. We are going to work out a plan to this end. We think they will be willing to pay what is necessary to bring this about. As Mr. Rankin has well said, it is quite true that most of the expenses of anything like this fall heavily upon a comparatively few men, and yet the expenditure of one dollar per annum per member would be all that you could possibly be called upon to give in order to support this movement. Of course if it does not prove beneficial in the course of two or three years, it will be abandoned, but no intelligent man in view of the situation today can say but that it is the right road to travel. The difficulties in the way are simply to be overcome; they were made to be overcome. That is the way we look at these things.

I am truly glad you are starting this organization. I wanted to call your attention to what is going to take place in Denver next week. I hope we will be successful there and that similar organizations to this will be formed all over the country. We have a very strong one in Kansas; also in Illinois, Iowa and Nebraska. I will be in Nebraska the end of the month. Yes, we have a good, strong organization there.

I want to say to you that this is the situation that confronts this great organization, which is the foundation of everything. As I have said before, were it not for agriculture there would be nothing.

Gentlemen, I thank you very much for your kind attention.

President Robbins: If anyone has a remark concerning either of these addresses—the one of Colonel Harris or Mr. Rankin—on any point of this subject, we will now hear him, but I should like to ask you to be as quick about it as possible, as it is getting about the time we are in the habit of eating.

Secretary J. H. Skinner: I do not want to be spokesman for this body, but it does seem to me that we have had our duty pointed out pretty clearly by Senator Harris and Mr. Rankin. It looks like we are not in this for fun; the need of a good organization has been emphasized. I have enjoyed listening to these men, and I think we all realize the possibilities of the State Live Stock Association in a way we never did before.

Now in regard to one point that Senator Harris made. He stated that they could not put their finger on anyone that represented the live stock interests in the States east of the Mississippi. That is the thing we are getting in the State organization, and it seems to me that these

statements are facts we should think on and keep in mind in all of our work, and try to make our association reach all men who are at all interested.

I think the suggestion in regard to the name of our association is in order.

President Robbins: If no one wishes to say anything further along this line we will adjourn. We have been here longer than we expected. This is the first meeting of this association, and I feel that it has been a good one. I think I am safe in assuring Colonel Harris and Mr. Rankin that if they will come next year we will show them a larger meeting. This is a movement that I am heartily in sympathy with myself and I think all of those connected with it are, and I am quite sure good will come of this. All things have to have a start, and as Colonel Harris said last night, obstacles will come up, but they were only made to be overcome. That is what we will have to do in this matter.

If there is nothing further we will stand adjourned to meet here the first Thursday after the first Monday in January, 1906.

SIXTH ANNUAL REPORT

OF THE

Indiana Corn Growers' Association,

Held at Indianapolis, January 4, 1905.

H. F. McMahan (deceased).....President.
D. F. Maish.....Vice-President.
Scott Meiks.....Secretary-Treasurer.

The meeting was called to order in Room 12, State House, January 4, 1905, by the Vice-President, D. F. Maish, of Frankfort, Indiana, and after requesting the members of the association to stand and join in repeating the Lord's Prayer, he made the following remarks:

Gentlemen of the Indiana Corn Growers' Association—I feel that it would be ungrateful in me if I did not say something of the work done by your late lamented President, and I feel that the beginning of this meeting is the time to say what I wish before proceeding with the program.

I knew Mr. McMahan to be a man full of life and energy, and it seems but yesterday that he was enjoying the pleasures of living. It is hard for us to realize that he has passed away, as his death was so sudden and unexpected to all who knew him.

Some of you know that a like sorrow came to me on the 7th of September, when our home circle was broken by the death of a child eleven years old, and you will perhaps realize with what sad feelings I have come to this meeting. My heartfelt sympathy is extended to Mrs. McMahan.

The Indiana Corn Growers not only lose a great and efficient worker, but the State of Indiana loses an honorable citizen as well.

The committee met November 17 and arranged the following program for this meeting:

WEDNESDAY, JANUARY 4, 1905.

Morning Session, 9:30 a. m.

Call to order by President D. F. Maish, Frankfort, Ind.

Correct Shape of a Grain of Corn.....E. H. Collins, Carmel, Ind.

Questions and Discussions.

Vitality of Seed Corn and How to Keep It...A. B. Hostetter, Springfield, Ill.

Questions and Discussions.

Corn Breeding for Practical Farmers.....A. T. Wiancko, Lafayette, Ind.

Report of Committee on Score Card.....J. P. Davis, Sheridan, Ind.

Afternoon Session, 1:15 o'Clock.

Election of officers.

Seed Bed and Cultivation of Corn.....J. H. Gwaltney, Poseyville, Ind.

Discussions.....T. A. Coleman, Rushville, Ind.

Advantages of Organization and the Market End of Corn.....

.....A. B. Hostetter, Springfield, Ill.

Questions.

There are many things which might have been placed upon the program, but we thought it best to do thoroughly a few things and get the best results rather than touch lightly on a great number and receive no benefit from any.

The object of this association is known to you all. It is not only to instruct us how to raise corn, because most of us know how to do this, but it is how to grow better corn in Indiana and to learn more about the corn product and its uses.

I believe that we have almost of us learned how to produce a perfect ear of corn, but do we know how to save it, and how to use it, so as to utilize every bit of the product? This is an important feature and the matter should be looked after so the Indiana farmer may receive the best and the most for his corn product. I recommend that this organization agitate this question.

There are thousand of acres of corn stalks standing in the fields today, and this is a great waste, and something should be done so that the whole product could be utilized in some manner and thereby turn this waste into profit.

The corn crop in Indiana is becoming larger every year, and to give you some idea of the magnitude of the product I will give you some figures on last year's crop: There were 4,015,179 acres of corn planted in Indiana last year, and this yielded 13,280,473 bushels of corn, averaging 33.07 bushels to the acre.

Counties having the largest acreage in Indiana were as follows: Benton, Tippecanoe, Shelby, Rush, Newton and Montgomery, named in order of their standing. The highest yield per acre in the State was in Tipton County, averaging 46.16 bushels to the acre.

Mr. Maish was followed by Mr. Collins of Carmel, Indiana, who spoke on

THE CORRECT SHAPE OF A GRAIN OF CORN.

In selecting corn, if the farmer would pay more especial attention to the uniformity of the kernel, shape and size, he would achieve a much better stand and crop.

It is very essential that the shape of the grain of corn should be taken into consideration when the selection is being made for seed. A long, wedge-shaped kernel, broad at the tip and one that contains a large germ is the best. Every kernel should carry a large germ to insure strong vitality. It is also important that we consider the size, color and length of the cob when making the selection.

The ear should taper, with straight rows of kernels, and the tip should be well covered, and be sure that the butt and the tip are sound. The color of the cob is another important point to be considered when making the selection. The color should be the same as that of the seed, as this indicates purity. Do not select a cob that is pink while the kernels are white, because if you do your corn will be of a mixed variety.

The ears should be full and strong from the butt to within a short distance of the tip. Good butts are considered as important by many growers as good tips.

As to the value of the corn, shape is much more important than uniformity.

The space between the rows should be considered and side space also, as this aids in good maturity.

If we desire a good, healthy corn crop, we should use great care in selecting our seed to plant and get the best that can be had.

Mr. Collins had samples of corn showing the difference between a good ear and a bad one. He also had drawings illustrating the correct shape of a grain of corn which would produce the most satisfactory results.

After the close of Mr. Collins's address the association had a few minutes for discussion.

Mr. Tindal, of Shelby County, had samples of corn of this year's growth, which he desired the members of the Association to see, and also desired their opinion of the quality.

After examining the samples it was found that they had not matured sufficiently and the grains were in a shriveled state. It was the opinion of the members that this was caused by the poor season, and although the corn was of good size it lacked the other points that are essential to good seed corn.

Mr. Walker, of Hancock County, and Mr. Apple, of Marion County, took part in the discussion.

Mr. Hostetter, of Springfield, Illinois, secretary of the Farmers' Institutes of that State, spoke on

THE VITALITY OF SEED CORN AND HOW TO KEEP IT.

The life of every grain of corn is in the germ, and that means a great deal.

Like all animals and other plants, the corn has two genders, the masculine and feminine. Although every grain of corn on an ear is of the same mother, they are of different parentage on the father's side. In order to have the highest vitality both of the parents must be of strong vitality.

Now, a great many things must be taken into consideration concerning the vitality of the corn. We can not expect to have the highest vitality in a grain of corn if we continue to raise corn on the same land year after year until the soil is impoverished, and if we do, the vitality will deviate, as the soil is too impoverished to nourish the stalks sufficiently to give the ear the proper nourishment in order to secure this high vitality.

You will also have a poor quality of corn if you plant a poor grade of seed. Plant the best that you have on the impoverished soil and you will get better corn than if you plant a poor grade of seed on good soil. This will prove to us that it is an essential point to consider the quality of seed when making your selection for planting, even more than the soil.

I am glad to see so many young men in this meeting. We are trying to get the young men of Illinois interested in the work of corn growing.

You know it is a very difficult thing to get the men who have become fixed in their habits to take up new ideas and methods, and in our State we are looking to the young people to carry on the new line of work.

We have an experimental station for the benefit of the farmers of Illinois, and we find it to be a great help in getting the people interested along this line.

It is just as essential to maintain the vitality of corn as in any other plant life. The corn for seed should be raised under the best possible conditions.

Corn that may do well and yield a large crop in Illinois might not do as well in Indiana. We should bear in mind that corn can not be taken too far from its habitat; that it often takes it two or three years to become acclimated, and if we do secure a good seed corn from a distance and try to grow it, you will be only experimenting and need not expect a large yield the first year or so. As a rule it is better to get the very best seed corn that can be secured in the neighborhood where it is to be planted, and the results will be more satisfactory.

If you desire to raise seed corn of the highest vitality you want to cut off the tassel of all the weak stalks.

It is wonderful how the corn plant will respond to an intelligent system of breeding and selection. The corn that will yield the most is the corn that we want to grow.

Mr. Hostetter closed his remarks by relating an old Indian legend of a beautiful maiden, the corn and the bean, and by quoting Longfellow in "Hiawatha Blessing the Cornfields."

"Sing the blessing of the cornfields!
Buried was the bloody hatchet,
Buried was the dreadful war-club,
Buried were all war-like weapons,
And the war cry was forgotten.
There was peace among the nations;
Unmolested roved the hunters,
Built their birch-canoe for sailing,
Caught the fish in lake and river,
Shot the deer and trapped the beaver;
Unmolested worked the women,
Made their sugar from the maple,
Gathered wild rice in the meadows,
Dressed the skins of deer and beaver.
All around the happy village
Stood the maize-fields green and shining,
Waved the green plumes of Mondamin,
Waved his soft and sunny tresses,
Filling all the land with plenty.
'Twas the women who in spring time
Planted the broad fields and fruitful,
Buried in the earth Mondamin;
'Twas the women who in Autumn
Stripped the yellow husks of harvest,
Stripped the garments from Mondamin,
Even as Hiawatha taught them.
Once when all the maize was planted,
Hiawatha, wise and thoughtful,

Spake and said to Minnehaha,
To his wife, the Laughing Water:
You shall bless tonight the cornfields,
Draw a magic circle round them,
To protect them from destruction,
Blasts of mildew, blight of insects,
Wagemin, the thief of cornfields,
Paimosaid, who steals the maize-ear!
In the night, when all is silence,
In the night, when all is darkness,
When the Spirit of Sleep, Nepahwin,
Shuts the doors of all the wigwams,
So that not an ear can hear you,
So that not an eye can see you;
Rise up from your bed in silence,
Lay aside your garments wholly,
Walk around the fields you planted,
Round the borders of the cornfields,
Covered by your tresses only,
Robed with darkness as a garment.
Thus the fields shall be more fruitful,
And the passing of your footsteps
Draw a magic circle round them,
So that neither blight nor mildew,
Neither burrowing worm nor insect,
Shall pass o'er the magic circle.'"

At the close of Mr. Hostetter's address a discussion followed and questions were asked. Mr. Benjamin, of Lake County; Mr. James, of Bartholomew County; Mr. Peters, of Clinton County, and Mr. Cunningham, of Miami County, took part in the discussion.

Professor A. T. Wiancko, of Purdue University, Lafayette, Indiana, gave the following address, illustrating the same with charts:

CORN BREEDING FOR PRACTICAL FARMERS.

The improvement of corn by breeding along definite lines is no longer a work of the scientist or professional seed grower alone. That it can be done easily and by every farmer on his own farm has been proven beyond a doubt. The scientists of the country have worked out simple and effective methods which any farmer can follow, and, by the use of a little judgment in selecting his seed, he can, in a short time, make very marked progress towards producing what he wants.

It will not be necessary here to enter into a separate discussion of theories. Let us proceed at once to take up one or two lines along which the ordinary farmer can improve his corn, and outline the methods of procedure.

Breeding for Large Yields and Uniform Quality.—To begin with, select a number of ears of corn of the desired type. The ears should be of good average size. The shape should be as nearly cylindrical as possible, with a proper proportion of circumference to length. The rows should be straight; the kernels should be deep, moderately rough, of moderate breadth and thickness, with a strong, well-developed germ and uniform in size and shape throughout the length and circumference of the ear. All the ears selected should be as nearly alike in every respect as possible.

In making this selection the score card of the Indiana Corn Growers' Association will be a good guide. The larger the number of ears used in this work of breeding the more rapid and pronounced will be the progress. For the purpose of our illustration, let us assume that twenty ears are selected. After a satisfactory selection has been made each ear should be tested and proven perfect in germinating power. The ears should then be carefully tipped and butted, discarding all irregular, small or otherwise imperfect kernels. They may then be shelled and preserved separately until planting time, or they may be shelled directly into the planter at the time of planting.

For the breeding plot, select a uniform piece of ground in good average condition. This may be located in a place by itself, away from all other cornfields, or it may be one side of a regular cornfield. If the latter location is chosen, it should be on the windward side of the field, i. e., on the side from which the prevailing winds come at the time of tasseling. This should be done in order that the rows may be protected as much as possible from the pollen of the corn in the main part of the field.

The corn from each ear must be planted in a separate row, or in two or more rows, according to the length. When more than one row per ear is required, the rows should alternate with rows planted from another ear. A careful record of the number of the row or rows in which each ear is planted should be made. For greater accuracy and as a guide for future selection, a brief written description and pedigree of each ear used should be made before it is shelled.

As soon as tassels begin to appear the largest number of desirable but alternate rows should be selected for detasseling. If there appears to be much difference in the time of tasseling, select the earliest rows for detasseling. The outside row, or preferably the two outside rows, should not be detasseled. Assuming that the odd numbered rows are selected for detasseling, begin with row No. 3, and carefully pull out or cut out the tassels as rapidly as they appear. In no case should any of these

be allowed to ripen pollen. Aside from these selected rows, all weak or otherwise inferior stalks in the tassel rows should also be detasseled, so that they may not take part in fertilizing the selected rows. The object of this detasseling, you will remember, is to prevent inbreeding.

When the corn is ripe husk the product of each of the detasseled rows separately. In case there was more than one of these planted from a single ear, they should be put together. You can now compare the products of the various ears and make your selection of single ears for the next year's planting. In determining the lots from which to select, the two important factors to be taken into consideration are the yield and the proportion of ears of the desired type. Select the rows, or lots, which gave the largest yields and the largest proportion of ears true to the desired type. Both factors must be considered. Accurate weights of the yields must be made, and these should be recorded in the pedigrees of the ears which produced them. Selection should be made only from the detasseled rows, because they are the only ones of which you are sure that they have not been inbred. Inbreeding weakens the constitution and may result in a very inferior product the next season. Select from at least two lots and use the ears from the better one for the mother plants, or the detasseled rows next year. Possibly three or four lots will be good enough to select from. After you have made your selection for next year's seed plot, the remainder of the good ears in the good lots should be selected as seed for the next year's bulk crop. A continuation of this method of breeding and selection is bound to result in more and better corn, and you will be many times repaid for the entire time and labor involved in this work.

Breeding for Higher Feeding Value.—In breeding for higher feeding value the same general methods as in breeding for yield and uniformity are followed, with the addition of selecting the ears that are rich in the important food constituents—namely, protein and oil. In this selection give due attention, first of all, to yielding power and uniformity. These qualities must never be lost sight of. The larger the number of ears from which you can select the better.

First select for their general qualities several times the number of ears you intend to use, and then go over them again for their feeding value, and select for use those ears the kernels of which have a large proportion of germ and a small proportion of the white floury matter. Examine several kernels from each ear by cutting them crosswise near the tip and lengthwise through the middle, as shown in the chart. The kernels of each ear are approximately alike. The relative proportion of germ, horny and floury portions can thus be easily seen. The larger the germ the better, because it is richest in protein and contains most of the oil. The horny portion contains the largest total amount of protein in the kernel.

A short discussion followed, led by J. P. Davis, of Sheridan, Ind.

At the close of Professor Wiancko's address Vice-President D. F. Maish announced that the Committee on Score Card would report to the Association what had been done.

J. P. Davis, of Sheridan, Indiana, made the report of the committee:

It has been five years since the score card has been changed, and revision was necessary. The new score card contains all the essential points that go to make up the perfect ear of corn. The following is an explanation of points of corn score card:

Note A. Cuts.—Where the number of points to be cut is not specified the scorer must use his best judgment and cut each ear according to its degree of variance from the standard and the value of the perfect ear.

Note B. Disqualifications.—A white cob in yellow corn or a yellow cob in white corn should disqualify the exhibit. An ear whose vitality has been killed should also disqualify the exhibit.

Note C. Size of Exhibits.—Each exhibit should consist of ten ears.

1. Trueness to Type or Breed Characteristics (10 Points).—All the ears in the exhibit should be true to variety type in size, shape, color, indentation, size and shape of kernel and other breed characteristics.

2. Shape of Ears (5 Points).—The shape of the ears should conform to the variety type. The ear should be full and strong in the middle portion and should not taper too rapidly towards the tip. The rows should be straight.

3. Color of Grain and Cob (10 Points).—The color of the grain should be true to variety, even in shade and free from moisture. White corn should have white cobs and yellow corn red cobs. For one or two mixed or crossed kernels on an ear cut $\frac{1}{3}$ point, for three or four cut $\frac{1}{2}$ point, for five or six cut $\frac{2}{3}$ point, and for more than six cut 1 point. Varying shades or color in grain or cob should be cut according to the degree of variance from the standard.

4. Vitality of Seed Condition (10 Points).—The ears should be well matured, firm and sound. The germ should be uninjured, large, bright, fresh and vigorous looking.

5. Tips of Ears (5 Points).—The form of the tip should be regular and not too tapering. It should be well covered with straight rows of regular kernels, of uniform size and shape. Proportion of tip covered must be considered, but irregular, shallow or small kernels may be more objectionable than uncovered tips. Cut $\frac{1}{2}$ point for each tip exposed one inch. For irregularities and lesser exposure cut from 1/10 to 1/2 point, according to judgment.

6. Butts of Ears (5 Points).—The rows of kernels should extend in regular order over the end of the cob, leaving a depression when the

shank is removed. Open, swelled, expanded, flattened and pinched butts are objectionable. Cut from 1/10 to 1/2 point, according to judgment.

7. Kernel Uniformity (10 Points).—The kernels of all the ears in the exhibit should be uniform in size, shape, color and indentation and true to the variety type.

8. Kernel Shape (10 Points).—The kernels should be deep and so shaped that their edges touch from tip to crown. The tips of the kernels should be full and strong, giving room for large, strong germs, which insures vigorous as well as high feeding value. Very small or very large kernels are undesirable.

9. Length of Ears (5 Points).—The length of the ears should conform to the standard of the variety. Uniformity in length is desirable. Add together the deficiencies and excesses in length and for each inch so obtained cut the exhibit $\frac{1}{2}$ point.

10. Circumference of Ears (5 Points).—The circumference of each ear should conform to the standard of the variety, or should be in symmetry with the length. Measure the circumference at $\frac{1}{3}$ the distance from butt to tip of ear for each inch of the sum of the deficiencies and excesses cut the exhibit $\frac{1}{2}$ point.

11. Space Between Rows and Kernels (10 Points).—The furrows between the rows of kernels should be wide enough to permit the ear to dry out readily, but not so wide as to lose in proportion of corn to cob. Space between kernels at the cob, in either direction, is highly objectionable, denoting immaturity, lack of vitality, low feeding value and a small proportion of corn to cob. Space of this kind should be cut heavily.

12. Proportion of Corn to Cob (15 Points).—The proportion of corn to cob should be determined by weight and should conform to the standard for the variety. For each per cent. below standard cut the exhibit $1\frac{1}{2}$ points.

General Standard of Perfection for Indiana.—A perfect ear of corn should be cylindrical, or nearly so, in shape. The length should be not less than eight inches and the circumference should be three-quarters of the length. The rows should be straight.

After a short discussion it was moved and seconded that the resolutions for the adoption of the score card be laid on the table, and the Association adjourn until after dinner, the card to be taken up at the resumption of business at 1:15 p. m. The meeting adjourned.

At the afternoon session the score card was again taken up and adopted by the meeting.

A committee composed of Professor A. T. Wiancko, of Purdue University, Lafayette, Indiana; E. H. Collins, of Carmel, Indiana, and J. P. Davis, of Sheridan, Indiana, were named as an examining board, before

whom all applicants who desire certificates as expert judges must pass an examination. Certificates will be issued by this board to all successful applicants.

Election of officers for the ensuing year was then taken up by the Association and the election resulted as follows:

President—D. F. Maish, Frankfort, Indiana.

Vice-President—J. P. Davis, Sheridan, Indiana.

Secretary-Treasurer—A. G. Mace, Lexington, Indiana.

Owing to the absence of J. H. Gwaltney, of Poseyville, Indiana, who was to give a talk on "Seed Bed and Cultivation of Corn," Mr. Collins, of Carmel, was asked to take his place upon the program, which he did, and gave the following interesting talk:

An old, successful farmer once said that he did not understand why we had to use so costly machinery nowadays; that when he was a boy he paid 10 cents to sharpen a barshare, and that he broke his corn ground with it, harrowed it with a wooden-toothed harrow, marked it off with a single shovel, dropped corn by hand, covered it with a straddle-jack and tended it with the single shovel; that he grew sixty bushels per acre and was out 10 cents, and his tools were not worth ten dollars. Now we must have every stump out, ride a fifty-dollar break-plow, twenty-five-dollar harrow, twenty-dollar roller and a twenty-seven-dollar cultivator. You work your corn from four to six times and don't secure any larger yield than he did.

My answer is embraced in two propositions—

1. In proportion as you work the humus out of your soil you will be compelled to use more costly and complicated machinery and to do more work on the land to wrench a profitable crop out of it.

2. In proportion as you return the humus to the soil and reinstate a natural seed bed will you be able to raise a profitable crop any old way.

Our common seed beds are faulty in many ways, one of which is being too hard; that is, being puddled on account of lack of humus. The other is in being too loose. This sometimes happens by turning under vast quantities of strawy crops. This latter condition is made worse by running the cultivator too deep in the first plowing.

If the soil is mellow it should be allowed to remain firm in its lower parts. Nature delights in a firm seed bed for root growth. All she asks is that it not be puddled. When Mr. Crawford grew his champion strawberries and vines he pounded his seed bed with a maul. If it had been as void of humus as some of our fields it would have turned to brick. It contained enough vegetable matter to prevent puddling and not enough to make it fluffy and open.

The plant rootlets that are so tender and porous and such good absorbing organs are very numerous in a good natural seed bed. It is intended that they shall come in contact with moist earth in every fraction of their course.

If the seed bed is filled with air chambers or with puddled clods these rootlets can not secure plant food and the plant often sends out roots in much larger quantity than necessary in order to secure food. This is exhausting on the plant life and dwarfing to its growth and yield.

The ideal seed bed is well drained, fertile, rich and mellow with humus, fine and free from large air chambers and clods.

After thoroughly discussing the subject of "What Constitutes the Best Seed Bed," it was the opinion of the majority of the members of the Association that clover made the best humus after it was properly turned under with a large disc.

Mr. Jones, of Bartholomew County, advocated the following plan: First year clover, second corn, third wheat, and fourth clover, etc. By following this rotation good crops would be the result and the soil always in good condition.

Mr. C. B. Benjamin, J. J. W. Billingsley and O. A. Somers were appointed as a Committee on Resolutions. They submitted the following resolutions:

"Whereas, The very unexpected and lamented death of H. F. McMahon, the President of this Association, has removed from our midst an active worker, one who had more to do, probably, in the organization of this Association, and did more than any one else in advancing the work of corn improvement in this State; therefore,

"Resolved, That we unitedly express our respect and appreciation of the valuable service which he rendered in the work of this Association;

"Further, resolved, That his many virtues and nobleness of character should be emulated by all, in that his life work was helpful to all with whom he labored. There was so much in his home and social relations—so much in his public spirit and activity, a man so true to his word and best impulses, that we are glad to point to him as a splendid example of that high type of manhood that should ever challenge our admiration;

"Further, resolved, That the foregoing statement and resolution be made a part of the records of this Association, and that we tender to his family our heartfelt sympathy for the loss of one so beloved; and that the Secretary of this Association cause a copy of these resolutions to be presented to the family."

After the reading and adoption of the resolutions a few minutes was given for expressions of remembrance of the late President. The following members spoke a few words of commendation;

Mr. Jones, of Bartholomew County; L. A. Barrett, Danville, Ind.; Mr. T. B. Barkley, Franklin County; Mr. George Walker, Hancock, Ind.; Mr. H. D. Tufts, Dearborn County; Mr. J. P. Davis, Sheridan, Ind.; A. W. Tindal, Shelby County; Mr. L. B. Clora, Franklin, Ind.; Mr. J. P. Prigg, Daleville, Ind.; J. C. Richards, Putnam County; Mr. T. A. Coleman, Rushville, Ind.; Mr. W. A. Alexander, Rush County; Mr. W. Osborn, Randolph County; Mr. Jacob Orth, Vigo County; Mr. W. S. Dunlap, Marion, Ind., and Mr. D. F. Maish, Frankfort, Ind.

The committee submitted the following resolutions also regarding legislation to be sought by the Association before the coming General Assembly:

"We, your committee, desire to congratulate the corn growers of Indiana, in behalf of this Association, on the splendid attendance of their representatives in this meeting of today, and it is with great pleasure we are enabled to note the wonderful progress made in this, the most valuable branch of the State's greatest industry, not only in the improved quality, but in the largely increased quantity per acre, and the intelligent conservation of plant food so essential to the growth of all farm crops.

"By reason of the limited aid rendered our experimental station the burden and expense has been borne by the few; therefore, we declare it to be the sense of this meeting that State aid wisely rendered and judiciously applied would insure a benefit to all our people, and we recommend that a committee of three be appointed to make presentations of our needs to the Legislature."

The resolutions were adopted by the Association and the following committee was appointed to act in co-operation with other agricultural committees to aid in getting suitable legislation that will be of benefit to the farmers in general:

Mr. D. F. Maish, Frankfort, Ind.; Mr. T. A. Coleman, Rushville, Ind., and Mr. C. B. Clora, Franklin, Ind.

Senator Moss, of Brazil, gave a short address before the Association. He assured the members that their representatives in the coming General Assembly would do their part if the sentiment was right and if it had the people back of it.

Mr. Hostetter, Springfield, Illinois, again addressed the Association upon the subject of

ADVANTAGES OF ORGANIZATION AND THE MARKET END OF CORN PRODUCT.

I am heartily in accord with an organization of this kind, and I believe you all are, judging from what I have heard here today. This organization is doing a great work for the farmers of Indiana.

We farmers of Illinois have found that close organization has proven to be of great help to us in giving us a better market for our product.

I believe I told you this morning that our experimental station has proven to be a great source of help towards getting the people interested in this work.

An experimental station means a great deal to men who are trying to improve the corn product, and the people find that the men in charge of this station are always anxious and willing to carry out their wishes. It has a tendency to bring about a closer organization among the farmers and helps to form a sentiment for the betterment of the corn product.

There is no plant on earth that has such a great commercial value as corn. There is no other product that the people of the world depend on so much as they do on corn.

We have improved the quality of our corn and now we must find some means whereby we can increase the yield per acre as well as the value of the corn that is produced.

All the farmers of the corn-growing States should organize themselves into an association and co-operate in pushing this important matter along.

We held a corn show or carnival at Peoria, Illinois, and it was surprising how enthusiastic the people all over the State became, not only the farmers, but the business men and the railroads took a great interest. The railroads offered prizes in the shape of a thousand-mile ticket, etc., for the best exhibit and gave low rates so as to enable the people from all parts of the State to attend. People came for miles to this carnival. The citizens of Peoria became interested and they assisted in every way possible to make it a success. And it was indeed a wonderful success.

I was somewhat surprised to hear that the average per acre in Indiana the past year was 32 bushels to the acre, as I was under the impression that Illinois was much farther ahead of Indiana in the corn product than that. The average for Illinois the past year was 34 bushels per acre.

If the farmers will form an association which will enable them to hold their grain, and be able to classify it according to quality and grade, they will find that it would be a great advantage and that they would receive much better prices for their product.

This could be done by an organization forming a corporation and building grain elevators where the grain could be stored until the market was in a good condition. In this way it could also be classified according to quality.

A man connected with the experimental station tells me that about one-third of the value of feed is in the stalk and the majority of this is going to waste.

The manufacturers of corn product never allow any part of the corn to go to waste. When they buy a bushel of grain they do not allow one bit of it to go to waste. If there is no good market for it they make a market, and we ought to do the same—make a market for our stalks; the best market is, at the present time, stock on the farm. The farmer should learn to utilize the entire corn plant, the grain and stalk.

In all the work we must look to the experimental station for the best work. You should ask your Legislature to give you an appropriation toward this, and I trust that when you do ask that your request will be granted, and that you will get a liberal appropriation to help you along with this work.

After a short discussion of Mr. Hostetter's address it was moved and seconded that the meeting adjourn.

The meeting adjourned at 4:30 p. m.

The following names are those who are recognized by the Corn Growers' Association as expert judges of corn:

J. P. Davis.....	Sheridan, Ind.
Raleigh H. Wyatt.....	Auburn, Ind.
O. P. Bowers.....	Muncie, Ind.
M. L. Fisher.....	Lafayette, Ind.
G. C. Graverson.....	Bremen, Ind.
G. L. Kerlin.....	Franklin, Ind.
P. E. Hudson.....	Lima, Ind.
Fred J. Orth.....	Edwards, Ind.
C. A. Brown.....	Franklin, Ind.
L. B. Clore.....	Franklin, Ind.
W. A. Alexander.....	Rushville, Ind.
J. D. Whitesides.....	Franklin, Ind.
E. H. Collins.....	Carmel, Ind.

REPORT

OF THE

Indiana Corn School and Stockmen's Convention,

Held at Lafayette, Ind., January 23-28, 1905.

The Indiana Corn School and Stockmen's Convention was called to order at 10 o'clock a. m. January 23 by D. F. Maish, President of the Indiana Corn Growers' Association, with a good attendance and bright prospects for a good week's work.

Professor Shamel of the United States Department of Agriculture gave lectures daily on the various phases of corn improvement, namely: the improvement of varieties; important characteristics of the root, stalk and ear; corn breeding, the selection, storing and drying of seed corn.

Each afternoon Professor Shamel spent his time in the judging room teaching the method of using the score card in selecting seed corn. The different varieties of corn were placed at the disposal of the farmers for examination, study and judging.

Professor Hartley, also from the United States Department of Agriculture, was present and gave some valuable information.

His charts showing the effect of in-breeding and cross-breeding upon the vitality of the corn crop were very instructive.

Mrs. Merideth and Miss Mathers gave lectures on "Home Economics," "Household Sanitation" and "The Chemistry of Cooking."

Quite a number of ladies were present throughout the week, and quite a little interest was aroused.

Mr. T. E. Orr spent the week giving lectures on poultry. "The Selection and Management of the Flock," "Methods of Feeding," "Kinds of Feed" and "Marketing" were some of the subjects discussed.

Chickens from the Lafayette poultry show were secured to illustrate the types of the different breeds.

The importance of the bee industry was also discussed in a series of lectures by Mr. Rowsome, of Canada.

Round tables were conducted each morning and the following subjects discussed:

"The Preparation of the Seed Bed," led by C. B. Benjamin.

"Planting—Time and Manner; Culture—Manner, Depth and Frequency," led by E. H. Collins.

"Harvesting—Storing and Disposition of the Crop," led by J. J. W. Billingsley; and "Corn Planting, Cultural and Harvesting Machinery," led by J. H. Gwaltney. The discussion was quite animated at each of these meetings.

The different members of the agricultural faculty gave much of their time in giving lectures and assisting in the laboratories.

Each afternoon Professor Skinner conducted the work in live stock judging at the judging pavilion. The different breeds of cattle and hogs at the Purdue farm were used in the work. An unusual interest was manifested when Flashlight and the other prize-winners at the late international were brought before the class.

Professor Holden, of Ames, Iowa, incidentally stopping in Lafayette, upon invitation appeared before the convention Friday morning, and the corn growers were highly pleased with the few words that he had to offer. His reception was most cordial and aroused great enthusiasm.

Professor Mumford, of Illinois, gave a lecture on "Economic Beef Production." His lecture was full of good, solid facts that were of great benefit to those that heard him.

The Corn School was undoubtedly the best ever heard. The attendance passed the four hundred-mark and the interest manifested was unusual.

That this is a great and good work for the State is a self-evident fact.

Saturday morning was a business session, and the following are suggestions as to the needs of a future program:

1. The work should be better organized and more definite work done.
2. The second afternoon a talk on scoring by the expert should be given in a separate room from the judging.
3. The judging room should be under a department superintendent, who should require students to attend regularly and on time, or give up their places to others. He should require good work instead of visiting.
4. A few samples of good corn of each variety should be on exhibition in the scoring room and in the lecture hall. Each sample should be plainly tagged, and, if desired, returned to the owner.
5. Testing cases should also be on exhibition in the main lecture room, showing corn actually growing.
6. Each department should have a superintendent.
7. Committees may do well to confer with Professors Skinner and Van Norman on exhibiting live stock and dairy products in the lectures. Fine horses for noted breeders can be secured free of charge and would add life and charm to the week's work. An exhibition of new features in farm machinery, such as edge droppers, spreader attachments for furrows, incubators, etc., should also be made.

The committee might consider the time of holding the Corn School either before or after the short course opens.

8. More illustrations should be given, such as the study of a fat steer on foot, followed in a day or two by an exhibition of marbled meats, along with lectures by experts. Lectures by experts should also be given on foods and their preparation.

9. Charts illustrating cuts of meat, fertilizers, feeding rations, house plans, lawns and the like should be constantly hanging on the wall of the main lecture room.

Bulletins of various kinds should be on tables and a card stating that to secure them free one should register his name and address in a book on the table.

A more systematic effort should be made to secure membership to the State Corn Growers' Association, which should not be made embarrassing.

The following committees were appointed:

1. Committee on the Future of the Indiana Corn School—E. H. Collins, Carmel, Indiana; J. B. Burris, Cloverdale, Indiana; E. C. Martindale, Greenfield, Indiana; C. B. Benjamin, Leroy, Indiana; Amos Garretson, Pendleton, Indiana; J. P. Davis, Sheridan, Indiana; J. P. Prigg, Daleville, Indiana, and L. B. Clore, Franklin, Ind.

2. Committee on Resolutions—J. J. W. Billingsley, Indianapolis, Indiana; Oliver Kline, Huntington, Indiana; J. H. Gwaltney, Poseyville, Indiana, and A. G. Mace, Lexington, Indiana.

3. Committee on Arrangements and Program—J. P. Davis, Sheridan, Indiana; C. B. Benjamin, Leroy, Indiana; J. B. Burris, Cloverdale, Indiana; Oliver Kline, Huntington, Indiana, and A. G. Mace, Lexington, Indiana.

The Committee on the Future of the Indiana Corn School submitted the following resolutions:

"We, your Committee on the Future of the Corn School and Stockmen's Convention, report that we conferred with the professors of the agricultural college and with the prominent members of the Corn School as to the future needs and lines of work helpful to the interests of our annual convention.

"The effort of the State Corn Growers' Association in co-operation with Purdue has aroused such an interest in the study of agriculture that our attendance has exceeded our most sanguine expectations. We recognize that in the future our duty lies, not only in increasing this interest, but also to join with the Purdue authorities to enlarge the scope and increase its efficiency.

"Realizing the magnitude of the work before us, your committee requested, and readily obtained, an audience with President Stone on the best methods to pursue which shall insure that continued concert of action which has characterized our work up to the present time. In the conference with Dr. Stone we received a hearty welcome, in which the doctor expressed his appreciation of the marked success and practical character of the work of this Corn School, and gave us his assurance of the continued support of Purdue University.

"Your committee suggests that this Corn School cordially invite all farmers of the State and their families to attend and enjoy the lectures of the week of the Corn School of 1906.

"We appreciate the provision for the instruction of women in the present program, and recommend that this school make it a permanent feature of our future work.

"Lastly, we recommend that the chairman appoint an executive committee of three members of this school to confer with a similar committee of the university in arranging the program and various details of our Corn School for 1906.

Respectfully signed,

E. H. COLLINS.
J. B. BURRIS.
E. C. MARTINDALE.
C. B. BENJAMIN.
AMOS GARRETSON.
J. P. DAVIS.
J. P. PRIGG.
L. B. CLORE."

Resolutions adopted by the Indiana Corn School of 1905:

"Whereas, The large attendance and unabated interest in the work of the Corn School and Stockmen's Convention, which has seemingly intensified throughout the session; therefore,

"Resolved, That we wish to commend the work to farmers and their sons and daughters throughout the State, and urge upon them to avail themselves of the advantages offered in these annual schools.

"Resolved, That we appreciate the aid that has been extended to the school of agriculture by the university authorities in providing for the erection of a dairy barn and live stock judging pavilion, and seeing the need of a beef cattle wing, favor the erection of the same at an early date.

"Seeing the results of the training and opportunities offered to young men in the school of agriculture; therefore,

"Resolved, That we commend the work most heartily to the people of the State, and especially to their sons.

"Whereas, There is an urgent demand for the training of our daughters in domestic science and home economics, in that many heads of families are planning to send their daughters to private schools and to other States where such educational facilities are liberally provided; therefore,

"Resolved, That we feel it is imperative that some provision be made, at an early date, for the establishment of a course in domestic science and home economics in our own agricultural school, so that it may be said that the training of our daughters for their life work is as well provided for as that of our sons.

"Resolved, That owing to the great importance of the poultry industry in this State and the demand for training in such work, we urge that a course in poultry raising be provided for in the regular agricultural course.

"Resolved, further, That in order to strengthen the work in the agricultural school and broaden its power and influence, we commend to the university authorities the favorable consideration of the work thus outlined by strengthening the agricultural faculty by such additions as may be found necessary.

"Realizing the urgent need for investigations in soil improvement, corn and crop improvement, live stock feeding and dairy investigations; therefore,

"Resolved, That in order that the Indiana Experimental Station may pursue such investigational work, we urge that the State Legislature, now in session, make appropriations as provided for in Senate Bill No. 191 to the accomplishment of this end.

"Be it further resolved, That we recommend that each member of this Corn School and Stockmen's Convention, on their return home, circulate

petitions favoring the appropriations as provided for in the bill before named, and that they write to their Representatives and Senators urging that they favor and work for the passage of the bill.

"Whereas, Death has removed from our midst our esteemed friend and fellow-worker, Mr. H. F. McMahan; therefore, be it

"Resolved, That we place on record this testimonial of our appreciation of the great and lasting influences for the upbuilding of agriculture which he has had such a large part in setting in motion; be it further,

"Resolved, By the Corn School and Stockmen's Convention, in annual session assembled, that the Secretary is hereby instructed to make this resolution a permanent record of the Corn Growers' Association.

"Be it resolved, That we hereby express our hearty appreciation of the work done and services rendered in behalf of the farmers of Indiana by Professor P. G. Holden, Professor A. D. Shamel, Professor H. W. Mumford, Mr. T. E. Orr, Mr. H. R. Rowsome, Miss Mathér, Miss Merideth and the faculty of Purdue University, who have contributed to the efficiency of the work and the success of the Corn School and Stockmen's Convention.

"Be it resolved, That we hereby tender the thanks of the Corn School and Stockmen's Convention to Mr. Fred Dorner for the flowers which he has so generously provided for our enjoyment.

"Resolved, That the thanks of the Indiana Corn School and Stockmen's Convention are hereby tendered to the Secretary of the United States Department of Agriculture for the able and instructive services of its assistants, Professor Shamel and Mr. Hartley.

(Signed.)

J. J. W. BILLINGSLEY.

OLIVER KLINE.

J. H. GWALTNEY.

A. G. MACE.

The following is a letter of thanks presented to Professor Stone of Purdue University by the Home Makers:

"Purdue University.

"Lafayette, Ind., January 28, 1905.

"W. E. Stone, Ph. D., President Purdue University:

"Dear Doctor Stone—We, the undersigned Home Makers, in attendance at the Indiana Corn School of 1905, heartily thank you for the instructions in home economics and domestic economy which you have provided for us.

"We have greatly enjoyed the instructions and have been benefited by it, as it will help us in the everyday work of our homes.

"We hope that you will be able to provide such instructions at the next Corn School. We will gladly tell our neighbors of the good work being done at Purdue and we will seek to persuade them to attend next year.

"We earnestly endorse the resolutions passed by the Corn School favoring instruction in domestic science as a regular feature of work for women at Purdue, and we will gladly use our influence to secure any needed State aid for such instruction.

Respectfully,

MRS. C. N. LINDLEY, Salem.
 MRS. JOHN DARNELL, Worthington.
 MRS. N. F. FLEMING, Muncie.
 MRS. W. M. MARTIN, Otterbein.
 MRS. GOLDA RANDOLPH, Judson.
 MRS. A. C. HALLIWELL, Chicago.
 MRS. J. B. BURRIS, Cloverdale.
 MRS. E. L. ELLIOTT, Salem.
 MRS. W. F. POWERS, West Lafayette.
 MISS CLARA WIGGINS, Lafayette.
 MRS. R. R. WYATT, Auburn.
 MRS. S. MARKS, Indianapolis.
 MRS. J. B. MARKS, Kingman.
 MISS PAMILLA SMITH, Milroy.
 MISS FLORENCE LITTLE, Logansport."

(The above are only a few of the ladies in attendance.)

INDIANA CORN JUDGES.

The following persons have passed a satisfactory examination and certificates have been issued to them as expert judges by the Indiana Corn Growers' Association: G. C. Gravenson, Bremen, Ind.; M. L. Fisher, Purdue University, Lafayette, Ind.; Fred J. Orth, Edwards, Ind.; E. H. Collins, Carmel, Ind.; J. D. Whitesides, Franklin, Ind.; W. A. Alexander, Rushville, Ind.; J. P. Davis, Sheridan, Ind.; R. R. Wyatt, Auburn, Ind.

PROF. A. T. WYANCKO.
 E. H. COLLINS.
 J. P. DAVIS.
 Examination Committee.

PROCEEDINGS
OF
Indiana Swine Breeders' Associations.

INDIANA SWINE BREEDERS.

The twenty-eighth annual meeting of the Indiana Swine Breeders Association met in their annual session at the State House, Indianapolis, January 5, 1905.

The meeting both in numbers and the interest shown was a surprise to the majority of the members.

All breeders know that the general run of swine business has been dull, owing to the falling off in prices of hogs on the market, the scarcity and high price of corn; but the two hundred members present seemed to have the same interest and enthusiasm as they had when hogs were at 5 and 6 cents. This meeting comes after all the other associations have held their sessions and talked over the fine and weak points in their favorites. At this meeting the boys seem to delight in "jollyng" each other about the good and bad points in the breed they championed.

President F. P. Modlin, of New Castle, Indiana, called the meeting to order at 10:30 a. m. There were about two hundred members present, representing the different breeds of swine throughout the State.

PRESIDENT'S ADDRESS.

Gentlemen and Brother Breeders of the Indiana Swine Breeders' Association—Under the protecting care of a Divine Providence we are thus permitted to come together in this twenty-eighth annual meeting for the benefit of the swine breeders' interests of our great commonwealth. This Association is the result of the combined effort of a few earnest, wide-

awake men, who saw the needs of those who were engaged in the breeding of fine hogs. It is certainly very pleasant for persons having a common object and a common interest to meet together and exchange social solutions at regular intervals and to consult with regard to the best manner of promoting that common object and interest. Those engaged in professional, mercantile and mechanical occupations have associations for mutual improvement, and shall the interests of the swine breeders, which are of so much importance to all other interests, be unworthy of associated effort?

Association is the origin and impulse of all progress. The elements of every department of society have their expansion and maturity under the vital power of this great principle. When its object is the good of all, it is to be commended. So I trust that our coming together on this occasion may result in great good to all concerned. When we become associated in this respect, we thereby become the servants of one another.

A short time ago Governor-elect J. Frank Hanly, in addressing a body of students at Purdue University, said: "No man lives to himself. It should be the highest motive of every individual to render service to his fellow-man."

I hope no one has come to this meeting with a selfish motive. If any breeder has come to this Association with some knowledge that he has gained by actual experience, he should be willing to impart the same to his brother breeders. In so doing he becomes a servant to others. I, therefore, urge that in all the discussions of the various subjects that shall take place at this session and the sessions that shall follow shall be of the most friendly nature, and that the practical suggestions dropped here and there, that are of merit to us, shall be treasured up, and prove to be of great benefit to us in this line of business. It is needless for me to take your valuable time in discussing the magnitude of this industry which we represent. But I just want to drop this thought, that as we sit beneath the dome of the Capitol of the great State of Indiana we should feel that we represent one of the greatest industries on the globe. We should, therefore, have a sense of dignity and honor about us, that we are public benefactors.

Someone has said, and truthfully, too, that the breeding and feeding of a herd of pure-bred hogs is an art. If we wish to be successful breeders we should have a love for the business. We will all admit that it takes a great deal of labor to properly care for a herd of pure-bred hogs. So we must combine labor with intelligence, because labor and intelligence go hand in hand. It is intelligence that is sold at a premium. Were it not for this faculty, which is capable of being expanded and enlarged in many ways, we would be of all creatures the most miserable. It is this factor pursued in a given line that has given us the draft horse of the present day, and in another direction has given us the wonderful two-minute rate of speed. It is this same intelligence, directed in another

line, that has given us the typical beef cow. And it is the same agent that has given us the Poland-China, Berkshire, Chester White and Duroc-Jersey hog of the present day. Was it just a happen-so that such noble representatives of the breed as Chief Tecumseh II, Chief Perfection II, Ideal Sunshine and scores and scores of others equally as good, if not better, were produced? You will all agree with me that those animals were produced by careful, systematic breeding, or intelligence well directed. Is it possible that the topmost round of the ladder has been reached in this breeding problem? Methinks if we were permitted to pull aside the curtain of the future and behold the hog of one hundred years hence we would be compelled to acknowledge a vast improvement over the hog of the present day.

One other thought and then I will close, and that is this: That all members of this Association should encourage all the younger breeders of our State to attend these annual meetings and thereby get them interested in the work of the Association, and, furthermore, I would earnestly suggest that all whose names appear on the program with duty assigned to them from time to time make an earnest effort to discharge the same to the best of their ability. I will not detain you longer. I hope that all your discussions and all that is said and done at this meeting may be of such a character that when this session closes that all may feel that they have been amply paid for the time and money they have expended in attending this meeting.

I want to extend to all the members of this Association my sincere thanks for the honor you have conferred upon me by selecting me as your chairman.

The minutes of the last meeting were then read by Secretary Wm. Midkiff, Shelbyville, Indiana, and adopted by the Association, after which the program was followed.

The first subject, "Is it profitable to raise two litters of pigs a year?" called out a long discussion, as it was a subject in which all seemed to be interested.

This was assigned to C. C. Cotton, Manilla, Indiana.

Mr. Cotton: I believe it partly pays to raise fall pigs. Under conditioning, a sow can have two litters a year and do well with them. I do not believe in having a spring gilt have two litters, but by breeding my old sows so as to have litters the first half of September, I can save a good number of the pigs and grow a comparatively even bunch, but of course they do not do as well as my spring farrow. It is impossible to keep some of them from being runty, and all will be a little smaller than the spring farrow at the same age. The reason I like a fall pig is for

my brood sow. I prefer a gilt of fall farrow as a herd sow for the reason that she is more fully developed before she has her first litter, which makes stronger and better pigs than if she was a younger sow.

J. L. Manlove, Bentonville, Ind., and Lloyd Mugg, of Kokomo, Ind., both stated that they did not raise two litters a year because they did not believe there was any money in fall pigs. A spring gilt would sell for more money in the fall than a fall gilt would sell for as a yearling after having been cared for all winter.

Mr. Farquhar, Modoc, Ind.: It depends largely on circumstances whether they pay or not. If a man has a good pasture and cattle for them to follow, with a good place to stay in, you can make fall pigs make you money.

In conclusion the Association decided that it was profitable to raise two litters a year if they were cared for properly.

When the second subject, "Which was Preferred, the Large or Small Hog-house, and Why?" was called, it was found that the parties on this subject were absent.

The discussion was opened by W. S. Johnson, New Augusta, Ind.

Mr. Johnson: I believe that the large hog-house is the thing for saving early litters. Take a house with four pens, about eight feet square, gives me the best results. I believe that by cementing the floor and foundations, then put in a false oak floor, would give good satisfaction, as it keeps the wind out and the pens very dry, which is very essential. The sow should be placed in the house two or three days before farrowing so that she will become accustomed to the place, which makes them quieter after the pigs come and lessens the per cent. of loss from over-laying. The house should be heated to about 50 or 60 degrees by a stove, but the pigs should not be kept in the place more than one or two weeks, owing to the weather, then they should be put out in pens by themselves, as too much heat is as detrimental to a hog as too much cold.

Mr. Lindley, of Fountain County, preferred the small single house, and said: Make it tight so as to keep the wind off, and give the sow plenty of bedding, is the most efficient way for me to save pigs. Have a house that would keep the wind out and then stay with them an hour or two after farrowing to get them started right. Then Mr. Piggie would do well enough by himself.

Several other very interesting ideas were brought before the meeting, all of them undoubtedly successful, but at the conclusion it was decided that the proper and profitable way to save and raise pigs is by having both the large and small hog-houses.

The meeting then adjourned for dinner, to be called to order again at 1:00 p. m.

One of the new associations of the State is the Indiana Improved Live Stock Breeders' Association, which held its first annual meeting on January 5. Prof. J. H. Skinner, Lafayette, Ind., in a short address to the Swine Breeders' Association introduced Fred H. Rankin, Secretary of the Illinois State Live Stock Association, of Urbana, Ill., who said:

"I hope to get an organization which will include all breeders and their different classes, with the purpose, not of doing away with any of the existing associations, but,

"First. To unite live stock men in a common cause.

"Second. To give them better standing and greater influence in furthering live stock interests.

"Third. To secure the best authorities in the United States to discuss topics of vital interest to all breeders and feeders at the annual meeting.

"Fourth. To bring breeders in touch with one another to promote good fellowship among them.

"Fifth. To encourage young men in the live stock business.

"Sixth. To give breeders influence with State and National legislative bodies, that needed legislation and appropriations for live stock interest may be secured.

"By doing this we will undoubtedly further all our interests and bring our stock, regardless of breed, to the front."

The third subject, "What are the Results from Feeding Breeding Stock for the Show Ring?" is one which comes before nearly every swine breeders' meeting and calls forth long discussions, in which a lot of old material is gone over, much of it belonging to other subjects, and in conclusion the Association decided that if the animal has been properly handled it does not materially injure their future usefulness.

"My Observation of the Swine Exhibits at the Fairs in 1905," the fourth subject on the program, was assigned to Joe Cunningham, Peru, Ind.

Mr. Cunningham: I believe the season just passed has been the greatest I ever experienced. While the numbers at each of the large shows have been considerably smaller, the quality has been something out of the ordinary, which shows an improvement over past years and that our present methods of crossing are successful. The first fair of the season is the Ohio State Fair. I was there, and believe this exhibit was the best I have seen on the grounds for five years, with the exception of the pig classes, which were not up to the ordinary, owing, it is

supposed, to our bad winter and spring. The next show, the Indiana State Fair, in which I am more interested than in any other, was, as we all know, quality, not quantity. At the close of the season I attended the World's Fair and had more pleasure and greater benefit than at any show I attended this year or in any other year. I believe that by following the great fairs from year to year, you will find them the greatest educators there are; in fact, it is the only successful way to compare your stock with that of your brother breeders, and by having an honest judge, good management of the show and an exhibit of high quality, one can learn more in one short week than in years of plodding by yourself.

W. H. McFadden, Chicago, Ill., followed with a short talk in which he complimented the Indiana breeders and shows, stating that among some of the noticeable things in these shows was the lack of good boar pigs. He said: In one show I remember there were ninety-eight head of boar pigs in the ring, and not one of them worthy of a ribbon. The judge did not even want to place the prizes. It was also noticeable that at the St. Louis show, as with all late shows, so much of the stock was over-fed. As a summary of the season, I believe that the most noticeable feature was the lack of boar pigs of merit, and this will also mean a lack of good yearlings in the future.

"Mating to Produce the Best Results" was assigned to Lloyd Mugg, of Kokomo, Ind. This is a subject which one could talk on for hours, but Mr. Mugg handled it in a very much to-the-point method. We feel sure that many of the younger breeders would have been pleased to have had him enlarge on it more fully. In his remarks he said:

"First I would select a male hog of medium size, not too growthy or too small. Our packers don't want a large hog, therefore there is no need of having a 1,000-pound male, but a hog that will weigh from 550 to 750 will come nearer suiting my purpose. I get him as near perfect as I can and extra in the head, back, feet and legs. I would get the same quality in the sows, only have her with a little more length. The medium-typed hog is what we need in all lines. This is the way I have been breeding for the past thirty-five years, and the last load I was compelled to put on the market topped it at \$6.20 per hundred."

A few minor questions were then asked, which Mr. Mugg answered, giving points in his experience as answers.

The sixth and last subject, "Obstacles to be Overcome by Beginners," was assigned to E. J. Barker, Thorntown, Ind. He being absent, M. Barker stated that among the most essential things for a beginner are for him to be sure he has a love for the business before he makes his venture. Then get a few extra individuals and ever keep his eye on the herd.

Col. Fred Reppert, Decatur, Ind., discussed the same from a public sale standpoint, and was very earnest in his hope that the breeders would cull more. Instead of trying to make a sale of sixty or seventy head of average pigs, devote all your time and energies to thirty-five or forty head and have them good ones, pigs you are proud of and pigs so developed that when the young breeders buy them they become his models, by which he plans his future crossing in hopes to obtain the same results. In other words, a pig that will satisfy him with the quality of the stock he is raising and makes him push for better things. Get the young breeders to the meetings, then the older breeders set them an example by living up to the statements they make while on dress parade.

Upon motion all the old officers were re-elected for the coming year, as follows:

President—F. P. Modlin.....	Newcastle.
Vice-President—W. C. Legg.....	Windfall.
Secretary—W. R. Midkiff.....	Shelbyville.
Treasurer—J. F. Elliott.....	Vincennes.
Executive Committee—F. F. Moore, C. C. Cotton, W. S. Johnson.	

The breeders did not hold a banquet this season, and many were disappointed. Upon a rising vote it was decided to hold another banquet, and E. K. Morris, David Wallace, A. F. May, C. B. Lockhart and Joe Cunningham were appointed as a committee on arrangements. A banquet will be held next season, at which the boys are expecting to have a rare good time.

William McFadden, Chicago, Ill., and Fred Rankin, Urbana, Ill., were taken in as honorary members.

The following amendment to the State Board of Agriculture was drawn up:

"We, the undersigned swine breeders, petition your honorable body to insert in your premium list for 1905 the following:

Boar and three sows under one year old.

Four pigs under one year old, the get of one boar or produce of one sow.

Pair of pigs under one year old and over six months old."

The meeting then adjourned to meet again in January, 1906.

INDIANA DUROC-JERSEY SWINE BREEDERS.

The annual meeting of this Association was held at Oneida Hotel, Indianapolis, at 1:00 p. m. on January 4, President C. C. Cotton in the chair.

There were fifty breeders present at this session, and in talking with the breeders none had any complaint about the past season. They all seemed to think that 1905 would be a prosperous year for the breeders. It was conceded by all that there would be more red sales in the United States in 1905 than in the history of the breed.

President C. C. Cotton, of Manilla, Ind., read the following address, which was well received:

Gentlemen and Brother Swine Breeders—I have only a short address, and that is a plea for our standards and a hope expressed that our Association will encourage the real fancier and inspire a love for our breed.

The Duroc-Jersey has a place at the top in the breeds of swine. Its superior merits are universally recognized. The large droves fully ripe, ranging in age and size, but bearing the sure mark of the Duroc-Jersey, compel the practical farmer and feeder to this breed, and while this continues someone must furnish the pure-bred sire and dam. This Association, with those of other States and the Nation, must help the "breeder and fancier" to maintain our standard, while our breed is popular, because it makes profits to the breeder. Every true fancier knows that back of all this and before all this there was a breeder who saw something better than the present dollar, and he had an ideal that was not marred by the dollar mark. He sacrificed and patiently waited while with skill he reared the animals that were to form the foundation for what is today our joy and our boast—a superior breed of swine. But, gentlemen, this commercial age, when dollars in banks, in bonds, stock or land is the insignia for real success, the temptation is great to forsake the real path of fancier for that of the money-maker. Excuse me, but I simply stir up your pure minds by way of remembrance—"We must not forsake our standards." A true Duroc-Jersey fancier loves the ideal of our standard of perfection. Our breed may suffer from that class of breeders who are more in love with the type of some other breeds than he is of ours, and hence sacrifices what we hold most dear, and the result will work ultimate loss to the breed as a whole. Our breed has shown marvelous strength and constitutional vigor, and if we sacrifice this for any other quality we doom our breed to ultimate extinction.

Breed for shape, which makes the breed, and color, which marks a breed. To bring these better results we must make free use of the knife

and send many of our good pure-blood to slaughter, as barrows and many gilts must pass to the same end. The extravagant statements in some of our advertisements work hardship, in that they profess a perfection they have not attained. The claims being proven false and dishonest, all of us must suffer. High honor among fanciers will work the greater good. The shows afford us great opportunity to get before the people our breed, and with honest judges and great numbers competing, a stimulus is afforded that could not be otherwise attained. More of us ought to show our stock. The low prices prevailing in the sales this year, being about an average of \$16 per head, ought not in any way discourage a real fancier, for the prices are not lower than those of other breeds. One good effect of these prices will be to drive out the mere speculator. Our faith is in our Duroc-Jersey as the one hog that pays always, and since the world must have our pork, we conclude that if we maintain our standard, be honest, be skillful, be patient, be enterprising, we must reap a golden harvest in cash, but we will do more. We will prove ourselves benefactors to mankind, and we prove to the swine breeders of the world that we are real "fanciers," not just feeders or sellers of "swine."

The following are the officers for 1905:

President—Carl Scott.....Muncie.
 Vice-President—W. A. Craver.....Fillmore.
 Secretary and Treasurer—C. E. Smith.....Lincoln.
 Executive Committee—C. B. Lockhart, Martinsville; E. M. Clark, Bunker Hill; J. B. Jones, Franklin.
 Program Committee—T. W. Johnson, Marion; E. E. Philips, Onward; L. Savage, Wagoner.
 Banquet Committee—David Wallace, Indianapolis; C. B. Lockhart, Martinsville; E. K. Morris, Indianapolis.

The first subject on the program was "The Breeding of Thoroughbred Swine." J. B. Jones, Franklin, said it was an art to breed thoroughbred swine to make a success of it, even after you get good ones; it is an art to feed and develop them successfully.

W. A. Craver, Fillmore: If somebody does not keep up pure bred hogs, the breed of hogs will run down. I hear farmers say that they have grade hogs that are as good-looking as thoroughbreds, but it takes a thoroughbred cross to make the grades good. I take pride in feeding thoroughbreds over grades, and you will treat them better and they are more profitable in many ways.

Frank Elliott, Vincennes: You can breed thoroughbreds as easy as you can grades, and they will develop faster on less feed.

Tom Vinnedge, Hope: I never could understand why a man should breed grades over thoroughbreds, for thoroughbreds will go on the market, if you want to market them, quicker and on less feed; then if you have any toppy individuals you can get a fancy price for them.

The next subject discussed was "My Type of Duroc-Jerseys."

Carl Scott, Muncie: I could pick you out my type better than I can describe it to you. I want good heart girth, broad back, good, deep ham: These points I want good sure. The points like the ear, jowl, feet and legs are the cheap meats, but I like the latter points good if I can get them without sacrificing the strong points.

Marion Stoltz, Zionsville: I want an animal with good feet and legs, then full in neck, for many are narrow in neck and poor in feet. I also want good back and ham, having good depth and width.

C. B. Lockhart, Martinsville: I was thinking of the foot. That is the weakest point I find in purchasing animals. I believe in the old adage, "No foot, no horse."

Carl Scott: You see, our best feeders are generally down on their feet, and I would rather have a good feeder on bad feet than to have a poor feeder on good feet. I like a good, broad back, and we ought to shorten up the neck. I like to see feet and legs stand out on the corners of the animal and not cramped.

A. C. Clelland, Macy: My type is short neck, good back, good heart girth, good feet and legs. I find feeding has a good deal to do with the feet. I do not want a long nose, and I want a fancy ear with a crimp in it.

W. A. Craver: As good a litter as I ever raised was from a boar that was bad on his feet. The foot question is what you make it. Get short joints, then they will not go down; give them exercise and they will hold up.

Barker, Thorntown: A neat, attractive ear is what attracts most buyers. It is a minor point, but it is a good seller.

Clelland: Some breeders think you can't get a large hog with a fancy ear. I have size, length and the tip ear, and I sold an animal that weighed 725 pounds, with fancy ears.

C. C. Cotton: It strikes me that we are inclined to drift away from our first type to a type of another breed. We are inclined to get them finer and more fat. You see more of that nice, neat, smooth type than you do of those that have size and length.

Craver: We don't want to go back to the first type we started with. I want a hog that has good size, medium ear, good feet, wide back, well sprung ribs, deep sides, strong loin, arch back, deep ham, straight hind legs, good hoofs and good, light cherry red. I always want plenty of size.

Question—"Can any breeder give the detailed standard of the Duroc-Jersey?"

Barker: I have a copy of the standard.

The same was read in full.

Cotton: The highest scoring sow I ever owned and one that out-scored all breeds at meeting of Indiana experts at Shelbyville, had a fine, tippy ear, plenty of size and length, good ham, good on feet, deep sides, well sprung ribs and was what you would call a large, fancy type.

The following paper on "Preparation for Brood Sow Sale" was read by Chas. B. Lockhart, Martinsville:

Mr. President and Members of the Duroc Association—To me has been assigned the subject of "Preparing for a Brood Sow Sale." As I am making preparations for a brood sow sale, I know no better way to treat the subject than to give a brief account of my own efforts in that direction.

Selection of Sows.—A collection of sows to be offered to Duroc breeders at a public sale should be the very best, both as to individuality and breeding, that can be obtained, and whose produce can reasonably be expected to make valuable addition to any Duroc herd. In order to secure such an offering, I have attended the best Duroc sales, either in person or by reliable representative, and have made it a rule to purchase only sows of high individual merit and in most cases the tops of these sales. In addition to the sows obtained in this way, I have selected a number of the choicest from my own herd. So that I have had altogether about sixty sows to breed in order to have at least forty that are safe in pig by the time my catalogue goes to the printer.

Sires Used.—Having constantly in view the improvement and advancement of the Duroc, the next important step is to place at the head of this collection boars whose produce will be a desirable acquisition to any herd in the United States. I think breeding should be commenced early enough for sows to begin farrowing in February, and be as careful as you may, you will do well to get them bred in time for the last ones bred to farrow in April.

Catalogues.—An attractive catalogue should be issued, giving complete and reliable information concerning each animal, and mailed about

a week or ten days before the sale. I do not think it a good plan to get your catalogue out too far in advance, as persons receiving them are apt to lay them aside and overlook the sale date.

Recording.—The American Association has reduced the fee to members to 50 cents. I would advise all breeders who are not members to purchase a share of stock and have all animals recorded before selling. I intend to have all animals offered in the future sales recorded and deliver certificates of registration to purchasers on the day of sale.

Auctioneers.—As soon as you have fully determined to make a sale, your auctioneers should be employed, first employing your home auctioneer and then one or two other men of his profession on whom both buyer and seller can rely. Through the efforts of active and energetic auctioneers buyers and seller can be brought together, which could be accomplished in no other way. Keep them reliably informed as to the condition of your herd that they may keep in touch with their customers. They will give you more than value received.

Advertising.—One of the hardest problems in connection with a public sale is the question of judicious and effective advertising. As the Swine Breeders' Journal is exclusively a swine breeders' paper, there is no question but that your first advertisement should be placed in that paper, especially in view of the fact that the valuable services of their representatives are constantly being exerted in the interest of the patrons of the paper, not only to the interest of the advertiser, but the breeder as well. It might be advisable to also use a good farm paper, such as the Indiana Farmer, the Farmers' Guide or the Farm Star, and last, but not least, don't fail to advertise liberally in your county papers.

Comfort of Breeders.—Especial care should be taken to insure the comfort and entertainment of visiting breeders, both the night before and on the day of sale, as well as at the ringside. This brings us very close to the trial of the case, when the Colonels will present the evidence and make the argument and the brother breeders, who will be both judge and jury, will, if the preparations have been well made on the foundation suggested in the beginning of this article, return a verdict that will mean both profit and satisfaction to the holder of the sale.

Marion Stoltz: A man ought to be very careful in not breeding too many sows to one boar for a brood sale, especially not to breed too many sows to the one boar on one day, and you want your offering in good condition.

Stafford, Manilla: Mr. Lockhart said he was going to record all the animals he sold at his sale. That looks like a heavy expense.

Lockhart: The American Duroc-Jersey Record Association have reduced their recording fee to 50 cents. I think it a good proposition to record every animal.

Fred Reppart: I think every animal should be recorded that is sold at these sales. It saves time and money and will sell them for more money.

J. B. Hilligoss, Anderson: I would just as soon have a pedigree as a certificate of registration; then if any of the animals prove worthless, you are not out the recording fee.

Marion Stoltz: I think Mr. Lockhart is right. It would be a paying investment to record every animal you sell.

Craver: It will help get your farmer trade. I am in favor of recording every animal.

J. N. Headington: I think it right, and I will never pay for another hog until I get the pedigree or certificate of registration. We are going to record all the sows that will be sold at the Portland sale, February 7.

Clelland: I think it the right thing to do and it will help the sales.

Allie Powell, Wabash: I wish to commend Mr. Lockhart on his paper. It is the best paper I ever heard on that subject. The best sales I have had this season were of animals that were recorded. The time has come that breeders want the certificate of registration for animals they purchase at sales.

Carl Scott: There is not a farmer but that would give \$1.00 more for a sow that is recorded, and it also educates them and gets them interested in the business.

Lockhart: The beginners do not know how to get them recorded, and this starts them off right.

The President called for a standing vote on recording all sows sold at a brood sow sale, and the vote stood three to one in favor of recording. After this was settled there was a general discussion.

Scott: I find that a sow bred at a year old will make the most profitable sow.

Craver: I had two good gilts to get in pig and it hurt their growth. They did not develop.

Question—"Is a sow that is a fall yearling harder to get in pig than a spring gilt?"

The general feeling was that they were not.

J. B. Jones: No gilt ought to be bred until she is nine months old, and it would be better for the sow if bred older.

Headington: I selected three gilts, bred them and they farrowed twenty-five pigs in the spring and in the fall thirty-five pigs, and later on one of these sows farrowed eighteen pigs and saved twelve. I have made money on sows having pigs at a year old.

Question—"Has any breeder had any experience with a dipping tank?"

The general feeling was that the dipping tank was a good thing to use.

Question—"What is a good remedy to give hogs or pigs when they have worms?"

Carl Scott: I feed the following combination: One hundred pounds of oil meal, two bushels ashes, one-half bushel salt, one-half bushel of lime, five pounds of soda, five pounds of sulphur, two pounds of copers. mix and put in a self-feeder. It will kill all the worms and keep them free of worms.

The Executive Committee made an assessment of 25 cents to the member, same to be sent to C. E. Smith, Linton, Indiana, Secretary and Treasurer.

INDIANA CHESTER-WHITE SWINE BREEDERS.

The members of Chester White Breeders' Association met in the city of Indianapolis, January 5, 1905.

The President, L. A. Hinshaw, called the meeting to order and delivered the following address:

Gentlemen and Brother Breeders—After what I hope has been a happy and prosperous year, I am glad so many have the best interest of the Chester White hog at heart to meet and discuss, instruct and learn how to bring our breed closer to that standard called "Perfection." I think the meetings have been profitable in a business way, and also socially.

Our hogs must become known and we must become known to an advantage to gain the respect and confidence of our customers. We should breed for the best and sell only the best. There can be no fixed rule to gain the best results, but by careful study of each type and profit by our past experiences, whether successful or not, we can mate the hogs so that we will gain, not so much in number of pigs raised, although that is an item, but of the class raised.

We should not be too sparing in the use of our knife, as I think it is more money in our pockets to sell on the market something that is not first-class than to send it out as a breeder, when it shows no credit to the breed.

Again, I believe more of the boys should be interested in the scoring school, and it cannot help but be a benefit to all who attend.

In the absence of a program, a "question box" was instituted and the subjects taken up in order.

Garrett Gibson, of the firm of Gibson & Son, read a paper, as follows, on "The Proper Age to Breed Young Sows":

The object in breeding sows is to produce strong, healthy pigs, without injuring the sow. If a sow is bred too young the pigs will be small and weak, and the growth of the sow will be checked, thus making a loss to the breeder at both ends of the string. A sow that is too young can not complete her own growth and bring forth a litter of pigs at the same time. At from nine to twelve months of age a sow is beginning to mature, her bones are formed, muscles developed. If bred at about this age, that is, so as to have pigs at from twelve to fifteen months of age, she is able to attend to her own growth and that of her pigs. Even at this age a sow must be well cared for to enable her to do herself and pigs justice.

In discussion of this paper, F. F. Moore said: It is my intention to have my sows farrow their pigs at about one year old. I agree with Mr. Gibson that it is injurious to the sow and detrimental to the pigs in a majority of cases to have a sow farrow under one year. A sow that passes over a year without breeding may become barren. This is more often the case that when bred earlier. It is my opinion that the best age to farrow—the first litter is when the sow is about twelve months old.

Question—"What makes the best growers and feeders, the produce of young or matured sows?"

F. F. Moore: This question is along the line of the paper read, being a part which must necessarily be brought out in the discussion. My experience would lead me to say that the best results come from matured sows, yet I have had some litters from young sows which have been as good and paid me as well as any litters from older sows. I feel, though, that it is somewhat of a speculation and my system of breeding is to use as much as possible matured sows. The per cent. of good ones from these sows is higher than where young sows are used. The matured sow simply has the development of her pigs to attend to, whereas the young sow must do double duty.

A. J. Foland: The question is a deep one and should receive the careful study of those present. What we do let us do well. If we only

discuss one topic, let us be thorough in it and arrive at some conclusion. What age of sows to use to produce the best pigs is a subject which interests every breeder of Chesters, and a satisfactory answer from those assembled here will be of vital importance to the future of our breed. I agree with what has been said, and would add to it by saying that I never part with a good producer, so long as she gives the results. In making my brooders I start them at a year old, very seldom breeding a sow at an earlier age than that.

W. Milner: I can not say why it is, but my experience is that the best results come from matured sows.

J. C. Weddle: I have raised a large number of pigs, raised them from aged and very young sows. It is my experience that to get good, strong pigs at the least cost and least trouble you must use matured sows. This holds good from farrowing to fattening time, also up to the market.

W. T. Farquhar: The sow is a machine for making pounds. She has a period when she is complete, every organ is matured, and at that point of perfection to do the best work. Previous to that condition what she eats goes toward developing that condition. If any extra duty is imposed upon her before that time, then extra care must be given to her that the additional work can be properly done. I believe that young sows can be made to produce the same results, but it will cost more, take more labor, and the result is not so certain, the risks greater. I believe that both the male and female produce best results at less cost, are more reliable when matured, or at the time of their highest maturity, than at any time before or after.

Lloyd Mugg: I always have thought matured sows produce a stronger offspring and one which matures quicker. As to quality, speaking from points, the young sow frequently produces quality which is lost from her inability to fully develop same. Most of us want a young sow to produce at a year. It frequently occurs that a young sow does not get her milk properly until three or four days after her pigs are farrowed. This is very detrimental to the development of the pigs. An old sow is always there with the goods, and in some instances with more than the pigs can consume. A young boar to an old sow is the cross which, in my experience, brings the best results.

Question—"What in your judgment is the most important thing to be done for the success of the Chester White hog?"

J. Milner: I suppose that you want me, in discussing this question, to point out the defects of our Chester breed. We all know it has defects, and we are here tonight to discover the consensus of opinion regarding them. The Chester is a good hog, a profitable hog, one we might

be proud of, and we should take delight in improving it. It is my opinion that more attention should be given to the feet, the bone and the head.

Mr. Bridges: I have had some experience with the breed, trying all the different families. It strikes me that the most important work of breeders is to keep blue and black flecks out of the skin and black out of the hair. It is very annoying to have a buyer tell you your hog is not pure breed, judging from the color in the skin and hair. I have had Chesters which were perfectly white and never threw any other color in skin or hair. I have others not so good. I am anxious to get back to the old reliable white kind.

W. T. Farquhar: While I appreciate a pure skin and coat, I feel that no other good quality of the Chester should be sacrificed to hold that condition. We all understand how the several families have been crossed and recrossed, until now it not infrequently happens that an extra good and desirable hog will have a mottled skin, or produce that result. To dispose of it perhaps would injure our herd or delay us in bringing out improvement along other and more important lines. For my part, I would prefer to build up the back, ham and bone. They can stand improving. Our Chesters have too heavy bone and are not as wide and even in back as I would like them. I could stand a little more ham. I have noticed in our show rings it often occurs that the Chester with a mottled skin walks off with a lot of ribbons. The ribbon taker is the style hog I want to breed to.

Question—"Can a breeder successfully raise two litters a year?"

S. Brooks: In my experience I find that one litter is almost as profitable as two, far less work and easier on the sow. As a general rule I would not practice raising two litters.

E. E. Hicks: It depends on what you have to raise them from and what arrangements you have for taking care of them. I consider two litters will not hurt a matured sow, and believe in some cases it will benefit them. I know that fall pigs come in just right the next year for the selection of brood sows. They are just at the proper age to breed for strong pigs.

J. Weddle: I agree with Mr. Hicks. Fall pigs can be made profitable, but it takes labor and money. It does not hurt a matured, strong sow to raise two litters, nor does it decrease her value to go over and only produce a single litter yearly. The main consideration is, are we prepared to grow these fall pigs at a profit. I am free to admit that I have never been able to realize on them to any extent.

Question—"How do you manage your public sales to make them a success?"

F. F. Moore: I am pleased to say that this question was assigned to me, as it indicates that someone considers that I have made a success of my sales. I have always considered, from a comparative standpoint, that my sales have been successful. I am the pioneer sale breeder in Chester White circles. My success, I feel, has come from the fact that I have kept continually at it, and have advertised freely. Of course, I have made mistakes and am fortunate in being able to recognize them.

To make a successful sale, first, you must have quality of stock. Second, you must mix with those you hope to obtain as customers. Third, you must buy freely. Fourth, you must advertise freely. Now, right here is where you can lose money. You must advertise freely, but your efforts must be rightly directed. To advertise freely does not mean to advertise everywhere. I did that and lost out. I have been carefully considering this question and have solved it in this way: I know we have a bashful representative of the Swine Breeders' Journal with us tonight, but regardless of his feelings I am going to give my plans for my coming sale. I have decided to use only the Swine Breeders' Journal and my county papers this year, making a large announcement in the Swine Breeders' Journal, perhaps a double page. Then I propose to buy from them five to seven hundred papers containing the "ad." and mail them to names I have obtained. I also propose to send out special cards to as many addresses as I can obtain in the territory I wish to cover. This is my plan and I feel it will be successful and that I can recommend it to brother breeders. You must advertise, but consider it well and reach your trade by the most direct route. The swine papers represent this, and the one circulating in your territory is preferable.

Question—"What is the best feed for your pigs?"

J. Milner: I feed all the milk I can get in addition to shorts. You must be careful and not feed too much and overdo the matter. I find that more trouble in pigs arises from not feeding properly than from what you feed.

A. P. Cleland: I also use lots of milk; in fact, all I can get, and mix it with shorts. I also use germ oil meal, which is 25 per cent. protein. It costs \$24.75 per ton and I find it cheaper and better than corn. When I use it with shorts I mix one-third oil meal and two-thirds shorts. I also mix it with sorghum skimmings, using one tub of skimmings to a barrel.

This ended the discussion, and the meeting took up other business. On motion, Frank Moore and Allen Beeler were recommended as judges for the Indiana State Fair.

The election of officers resulted as follows:

President—A. L. Hinshaw.....	Zionsville.
Vice-President—J. A. Milner.....	Thorntown.
Secretary—W. H. Morris.....	Indianapolis.
Committee on Arrangements—W. H. Morris, T. A. Farquhar, J. Milner.	

The Association then adjourned, to meet in January, 1906.

CENTRAL POLAND-CHINA RECORD ASSOCIATION.

This Association, one of the oldest in the United States for the recording of Poland-China swine, met in Indianapolis on the afternoon of January 5, 1905. The meeting was well attended and visiting breeders were feeling good over prospects for this popular breed of pure-breds. As this Association follows the plan of meeting in joint session with the Indiana Poland-China Swine Breeders for the consideration of the management and advancement of the Poland-Chinas, the general work in this meeting was confined to the transaction of record business.

The President, Adam F. May, called the meeting to order. He said: I am pleased to note the enthusiasm of past years still continues to expand and spread throughout our membership. We have an attendance today which speaks well for the future of the Central and Poland-China hogs in Indiana. The season has had its discouragements, but we have overcome them, and today I feel that the coming year will be one of great progress. Regardless of the fact that every effort has been put forth to draw them to competitive associations, I am pleased to say we have lost none and have added twenty-nine new members, with several others contemplating membership in correspondence with our Secretary. The Central system is such as to appeal to all desiring full and efficient service.

If the members will agree to such action, we will dispense with the roll call.

Agreed.

Reading of minutes of last meeting; accepted.

The final report was read and referred.

The Secretary made a statement that because of the destruction by fire of the early printed signatures of the record, volume 25 had been delayed and could not be issued at a very early date unless issued in two parts. The Association decided that such issue should be made so as to place at least a part of the issue in the hands of the members. There being no committee to report or new business, the Association went into the election of a Board of Directors.

On motion of W. Midkiff, seconded by Lloyd Mugg, it was moved that the President nominate the Board, he to act as one of the Board, that the Association ratify his selection. So ordered.

The President announced the following:

Lloyd Mugg, Kokomo, Ind.; Adam F. May, Flat Rock, Ind.; W. H. Midkiff, Shelbyville, Ind.; W. O. Canady, Anderson, Ind.; Tom Lindley, Russiaville, Ind.; Bob Bratton, New Ross, Ind.; A. S. Gilmour, Greensburg, Ind.; Walter Kemp, Anderson, Ind.; J. V. Wright, Grammes, Ind.; John L. Manlove, Bentonville, Ind.

On motion of Linc Lukens, seconded by W. Jack, the unanimous vote of the Association was cast for the above for directors for the coming year.

The Board reported the selection of officers as follows:

President—Lloyd Mugg.....Kokomo.
 First Vice-President—J. V. Wright.....Grammes.
 Second Vice-President—August Post.....Moulton, Ia.
 Third Vice-President—R. K. Beam.....Ansonia, Ohio.
 Secretary and Treasurer—W. H. Morris.....Indianapolis.
 Executive Committee—W. Hartman, Southport; Lloyd Mugg,
 Kokomo; W. O. Canaday, Anderson; John Harcourt,
 New Augusta; W. H. Hughes, Brownsburg.

Vice-Presidents for States:

Indiana.....H. A. Pickett, Greentown.
 Illinois.....J. H. Irwin, Pleasant Plains.
 Ohio.....J. H. Suter, Leipsic.
 Kentucky.....H. S. Morgan, Whites Station.
 Nebraska.....W. T. Judy, Kearney.
 Tennessee.....Tuggle Bros., Grant.
 Mississippi.....H. W. Brantley, Marksville.
 Iowa.....E. M. Metzger, Fairfield.
 Maryland.....Jas. Reany, Jr., Baltimore.
 Louisiana.....S. L. James, Angola.
 Texas.....C. W. Thomas, Pottsboro.

Alabama.....	Clifton Kirkpatrick, Cahaba.
Kansas.....	Howard Kidds, Oswego.
Pennsylvania.....	S. W. Guthrie, Homer City.
Missouri.....	Geo. Young, Millville.
Minnesota.....	C. D. Smith, St. Charles.
Arkansas.....	H. Comstock, Hazen.
Michigan.....	A. J. Espie, Jonesville.

The Association then adjourned to meet with the

INDIANA POLAND-CHINA SWINE BREEDERS.

President Lloyd Mugg called the meeting to order. In the absence of a program a "question box" was instituted, which the members took up.

The question of transfers and breeding certificates was introduced.

W. H. Morris: The subject of transfer and breeding certificates is one which is growing into importance. It has only been but a few years when the breeders of Poland-Chinas were so few it was within our remembrance to call them all by name. Today we have five thousand men actively at work in Poland-China circles, selling, buying and exchanging stock. Since the advent of public sales popular brooders have after breeding been offered at different sales, and between the time of service and farrow have perhaps passed through several sales, making a transfer for every sale, none of which are on record. When the pigs of such a sow are presented for record these records of sale and breeding must be obtained. It frequently occurs that some one or more buyers have neglected to keep a record of their sale or purchase of the animal, a broken link is presented, which causes considerable friction and trouble before it is obtained, and frequently it never is obtained, and a good animal with her litter is sent to slaughter. The time is now at hand when no purchaser should accept a pure-bred hog unless all papers are properly drawn up and known to be correct. If you feel that there may be any doubt that the papers are not complete, submit same to your secretary and have them verified. To the seller I would say, always fill out all papers and forward them to the purchaser at the time of the sale. Also keep a book account of all transfers, services, etc., so that in case of any inquiry your home record will protect your customers.

Line, Lukens: I consider the subject one which should interest every breeder of Poland-Chinas, and one which we should freely discuss in a meeting of Poland-China breeders. The things we should avoid are those

which are liable to cause trouble, and any irregularity in pedigree is sure to redound to the disadvantage of the breed. In my experience I have had considerable trouble, and today have some excellent brood sows, bred, which, unless I can procure the necessary transfers completing their record, it will be necessary that I pork them with their litters. I have reached the conclusion that in future all papers must be in my possession and I must know them to be correct before I purchase the stock. I have also decided that at all my future sales I will have all papers completed and ready to tender to the purchaser when settlement is made. I would suggest that the only method for preventing future trouble is for all to follow this plan. Never accept a purchase unless the pedigree is complete and fill the rule of entry of our Association.

Adam F. May: There is no doubt in my mind that much trouble could be avoided and fewer mistakes occur if all of us were to follow the plan suggested. It would also follow that our records would be more reliable. It is our duty to assist in this matter of preserving the true history of the breed. Carefully kept home records and a promptness in rendering a correct pedigree to our purchasers is necessary to true public records.

Question—"Is there a difference between a breeding and a show type? What is it?"

Joe Cunningham: Yes, there is a difference. I have noticed that the winning type is more close and compact than the type generally selected for breeding. Yet our show hogs, premium winners, are perhaps our greatest breeders. I mean by that that the winners in our leading shows are used individually on a larger number of sows than the average breeding hogs. I also believe that in selecting sows for the show ring we select more to the compact kind, whereas in selecting a sow for breeding we select those of greater length.

Question—"How did you feed the hogs that you took to the World's Fair?"

Lloyd Mugg: I did not get to take my hogs to St. Louis, as you all know, yet I had them in shape and would have gladly completed the arrangements by taking them. As to fitting hogs for the fair, I always try to fit them under the conditions which I know they will meet when campaigning. I keep them in dry lots with little if any shade, away from running water, and feed grains which I can take with me or know I can obtain on the fair grounds. I keep them on dry lots and get them used to the heat, because I know dry, hot pens and hot, oppressive trips and tedious waits is what we meet with on the road. A bunch of hogs fitted in a cool, shady woods lot, with running water, fed on milk and other delicacies, will not hold up under a fair season where none of these conditions are present; in fact, the conditions are usually just the reverse.

As to the feed, I use corn, bran and shorts mixed with water. I salt two or three times a week, feed charcoal and ashes and a little stove coal occasionally. I keep increasing the feed until I am feeding them all I think they can stand, and then hold them at that. I find that you must study each hog separately and feed them according to what in your judgment you think is best for them. I did not feed any sugar or oatmeal or any food of that kind. I gave them plenty of water three times a day. Tempered them by keeping them in dry so as to insure them against loss by shipping. If exercise was needed I gave it to them. They had some grass and at the finish some green corn. I fed the same amount of shorts in bulk as I fed bran. Never fed any milk. Never soaked any feed, always mixed fresh, making a good, thick slop, fed all they would clean up each meal, never fed but twice a day, morning and evening. I found that some hogs preferred corn, others slop. I always gave them what they seemed to like the best after they had eaten the other feed.

Question—"How should I care for young pigs?"

Line. Lukens: This is a subject which I know can be presented to much better advantage by any of the breeders present than I can do it. In fact, I never was a success as a developer of pigs. I have lots of neighbors in my section who can skin me on raising pigs—do it easily and all the time. I have always had better success when I put my sows out among these good neighbors and find it much the easiest way of fitting my young pigs. As to my individual method, I suppose I do as you all do, with one exception. I always let the pigs suckle the old sow as long as she will let them. I think she furnishes richer food than I can mix, and the longer the pigs have it, the better for them. Regarding further treatment, I have separate lots and my pigs cannot mix. This I find of some advantage.

Question—"How do you prevent scours in pigs?"

E. W. Avery: About scours in pigs, some breeders are terribly afraid of scours. I have had trouble with scours, but now I am not at all afraid. I can cure them every time.

Voice: Give us the remedy.

Mr. Avery: Soda and sulphur, one-half teaspoonful of each to the sow, three doses in twenty-four hours. That will knock it every time.

Question—"Are we breeding the Poland-China hog too small? If so, can we remedy the evil?"

W. M. McFadden: This is a subject which I do not feel that I am able to do justice to, especially before a gathering representing a large majority of the leading breeders of Poland-Chinas in Indiana. I will say

in the first place, I do not know whether we are or not. If we listen to the talk which seems to go around wherever a number of breeders of Polands get together, we would certainly think the Poland-China hog was a big mistake; that as to size and bone it was a fraud; that it was gradually falling off in size until in a few years we would have no hog. I do not believe the Poland-Chinas are getting too small. I have found that size is almost the easiest thing to get. The hardest hog to produce is the best hog. I believe the hog that wins the ribbons in our show rings is the best hog, is the standard, and you all will agree with me as a rule they are plenty large. The standard is the market. The best hog for the breeder is the best hog for the farmer, is the best hog for the packer, and it is the type which wins under our judges. You often hear it said that the small hog wins. I don't believe it. I can not see any use for any more size than what I have seen in a large number of our winning hogs, and I attend nearly all the large fairs of the country. The champion barrow at St. Louis, pronounced to be as near a perfect hog as the judge ever saw, considering the packer's type, weighed about 521 pounds, which in my judgment is plenty large enough, and represents the best type for the breeder and farmer.

Question—"What is the most successful treatment for canker sore mouth in pigs?"

Joe Cunningham: I do not have any trouble with sore mouths in pigs. Never had but one litter so affected. I take the precaution to nip off the large pig teeth, which prevents the pigs from biting each other and getting the mouth sore. Do not know if these teeth are the cause, but think it a good plan to remove them.

W. W. McFadden: I have often heard this subject discussed. At a late meeting of breeders I heard a doctor discuss it, and I feel that he was practical and posted. He said there was no question but that the disease was contagious and that it came from a germ; that cleanliness, a liberal use of disinfectants and careful observance of all sanitary rules would protect the herd. After the disease started in a herd it was a very difficult matter to stamp it out.

Question—"Are the Poland-Chinas bred too fine to produce and rear large litters?"

F. P. Modlin: As a rule the Poland-Chinas are plenty large enough and capable to produce and rear large litters. As a rule they farrow enough pigs. Occasionally one fails, but nine out of ten sows raise good litters. I consider a good litter from seven to nine pigs. If a sow raises seven good pigs, she is doing well enough for me. A sow that has ten or twelve pigs has more or less runts and does not mature this number as well as the sow having a litter of seven.

Linc. Lukens: My experience bears out what Mr. Modlin says: Large litters nearly always show some runts, and these litters are nearly always inferior to the litters of seven or eight. The smaller litters generally develop and fill out the best. I believe they make the most money, sell at better prices, because of the better development of the points.

Question: "How long is a man to keep a sow that fails to come in before he should complain to the breeder that sold her?"

Linc. Lukens: This is a question which interests me, and one on which I should be pleased to have the opinion of this meeting. It is a vital question with breeders making brood sow sales. We have to give a guarantee; now, the length of this guarantee is the point which interests me. I think it should not be longer than ninety days.

Lloyd Mugg: There are but very few sows which will not breed if properly handled. I generally request parties I sell to to try again after writing me, at the same time I tell them what I would do. Then if the sow will not breed, to return to me and I will give them another sow. I have had two sows returned, both of which I succeeded in getting in pig. One I fed as if I was fattening her for slaughter, then I used a young hog on her and succeeded. The other I simply turned on grass with a young hog. It depends on how you handle them, and I will say that under proper treatment very few sows fail.

The meeting then adjourned to meet in 1906.

PROCEEDINGS

OF THE

Indiana State Guernsey Cattle Club.

The annual meeting of the Indiana State Guernsey Cattle Club was held in Room 35, State House, January 5, 1905. John Morgan, President. The roll was called and all the members were present.

The club then elected the following officers for the ensuing year:

John Morgan.....President.
S. C. Reese.....Vice-President.
Oliver H. Mills.....Secretary.
Amos Mills.....Treasurer.
Executive Committee—John Morgan, Plainfield; Oliver H. Mills, Mooresville; Eli Hawkins, Kokomo.

The Secretary then read from papers on Guernsey cattle, their origin and success as dairy cattle.

John Morgan then read the following paper:

GUERNSEY CATTLE IN INDIANA.

About the year 1889 I was at a county fair in Tippecanoe County, Indiana, and saw my first Guernsey, a fine three-year-old bull. He was a rangy-looking fellow, with yellow skin and other characteristics of the breed. He attracted but little attention, as every dairyman seemed to cling to the Holstein and Jersey. From 1892 to 1894 I traveled in a large number of the dairy States, selling creameries and purchasing butter. I found that wherever the Guernsey cattle were being tested the results were very satisfactory. But I only found a few herds, some half-breeds and some registered bulls. The color of the butter was so satisfactory that I determined to own a cow myself. I tried to purchase one at different places, but they were out of my reach. In the fall of 1894, J. Howard Davidson, of Altamont, N. Y., attended the Indiana State Fair with his famous Chicago World's Fair herd. Many of his animals took first prizes there, as well as at some seventeen other large State and interstate fairs.

There were dropped on the fair grounds at Indianapolis two calves, a male and a female, in this noted herd. The calves were both sired by Carman 2050, and out of splendid dams. The difficulty of shipping calves so young to the next fair where the stock was entered, Trenton, N. J.—enabled me to purchase these animals at a price unheard of for such stock. I took both home and raised them by hand.

I have sold two heifers and eight bulls and have now a herd of three cows, two heifers to be fresh in the spring, and two bull calves, in all eleven now in the herd, making, with those sold, seventeen head in ten years.

Mr. Oliver Mills has, in partnership with me, Solomon of Homestead 8499, one of the best Guernsey bulls in America, to which I am now breeding my cows and heifers. Solomon has only been shown at fairs six times, and for these he has six blue ribbons to show, being first twice at the Indiana State Fair, and once each at New York, Ohio, Kansas and Illinois State fairs. Oliver Mills and his brother, Amos Mills, have some twenty-five to thirty heifers by registered Guernsey bulls and good Jersey mothers. There are a few full-bloods at or near Kokomo and North Vernon, and in some of the southwestern counties there are a number of grades. Black Bros. have a few. I suppose there are not in the State, all told, more than fifty registered Guernseys.

They are to me the most satisfactory dairy cattle I have ever handled. I have tried Devons, Holsteins and Jerseys, but the quiet disposition of the Guernseys, free from nervousness, their hardiness and their ability at the churn, recommend them to dairymen wherever they have a trial. Dairymen in other States have often been known to sell their Jerseys and buy Guernseys, but the man who would part with his Guernseys and substitute in their place Jerseys has never been heard of. They are to me the grandest of the dairy breeds, good size, hardy constitutions, persistent milkers and standing alone in producing the richest colored milk, cream and butter of any cow in the world.

The Club then adjourned, to meet next year at the same time and place.

THIRTY-THIRD ANNUAL MEETING

OF THE

Indiana Shorthorn Breeders' Association,

January 4, 1905.

FIRST SESSION.

The first session of the annual convention was convened at 11 o'clock a. m., Wednesday, January 4th, Vice-President Christian in the chair.

Secretary John G. Gartin made the following report:

Cash balance in Secretary's hands January 5, 1904.....	\$9 50
Received by check from Treasurer, September 15, 1904.....	47 11
Dues received	38 00
Total	\$94 61

EXPENSES OF SECRETARY.

To stenographer for reporting convention.....	\$22 50
Postage stamps	7 00
Printing reports, stationery, notes, etc.....	54 00
Postal cards	1 50
Treasurer's expense	1 00
Printing programs	1 50

Total expense\$87 50

Balance in Secretary's hands, \$7.11.

On motion of Mr. Quick the report of the Secretary was received and placed on file.

Treasurer Silverthorn read the following report:

TREASURER'S REPORT.

January 4, 1905.

General fund on hand at last meeting.....	\$47 11
Paid Secretary Gartin to defray expenses of stenographer and printing report	47 11
Balance prize fund on hand at last meeting.....	1 72
1904 prize fund collected.....	548 60
	<hr/>
Total	\$550 32
Paid premiums in special prize class at State Fair.....	490 00
	<hr/>
Balance unexpended prize fund.....	\$60 32

Respectfully submitted,

JAS. E. SILVERTHORN, Treasurer.

On motion of Mr. Quick the report of the Treasurer was received and referred to the Auditing Committee.

The session was then adjourned to 2 p. m.

SECOND SESSION.

The session was called to order at 2 p. m., Wednesday, January 4th, Vice-President Christian in the chair.

The chairman appointed the following members to act as an Auditing Committee: Walter Quick, John Robbins and T. J. Christain.

ADDRESS BY W. E. HARRIS.

Senator W. E. Harris, of Kansas, addressed the convention as follows:

I have no particular subject to speak upon, but expected to hear from some of the Indiana breeders before I began my talk. I thought something would be brought out in the way of discussion.

I feel it a very great honor to attend a meeting of the Short-horn breeders of Indiana, because Indiana stands high in the breeding of short-horn cattle. Indiana is the home of bluegrass, the only state in the Union that can claim bluegrass as indigenous to her soil, and cattle have followed naturally.

When I reached here this morning and went into your agricultural rooms one thing excited my regret at once—the lack of pictures of short-

horn cattle. I found pictures of Herefords, of Angus and other breeds of cattle, but no short-horns. Nor do I find pictures of short-horn cattle in the railroad stations or hotels, as we have them in the West. I see pictures of Herefords everywhere, but no pictures of short-horns. Your state exhibited this year what was, to my mind, the only great star attraction of any of the great fairs. In St. Louis your state had the only animal that at once simply stepped to the head of her class. There was but one animal exhibited this year about which there was absolutely no question at any of the fairs; she simply walked up to the head of her class and took her position without opposition from anyone.

The pushing of a breed of cattle in public esteem is as essential a part of the business as anything else. I do not see Mr. Bowen here, but I wish to direct my remarks especially to him. He has an animal that ought to be sent on down. Others of you have cattle that are near the top. No other cattle could compete without the closest contest with the cattle exhibited by Robbins Brothers. Pictures of those cattle could be engraved and sent all around the country at comparatively small expense, either by their owners or by this association. Out in Kansas we have had to fight hard to maintain our claim for superiority and for merit before the public against the Angus and the Hereford men, and they have always had us at a disadvantage in the way of that kind of advertising. They show more liberality in the matter of informing the public of the merits of their cattle than we do. We simply rest upon the old, old history of the short-horns, the breed of cattle that has followed the English language all around the world. We rest upon that history and think that everybody else knows it. There are millions of people being born and coming up and traveling over the world who know nothing of this history. Frequently men of wealth see attractive pictures of Herefords or Polled Angus cattle. Their attention is caught by them, and the first thing you know they are breeding these cattle, paying large prices for their first herds. I know of cases of that kind—many of them. When we complain of dullness in our business and the rivalry of other breeders we ought to see to it that we take advantage of the opportunities we have and exploit the cattle we believe in. It is a necessary part of our business, and one that should not be neglected. In this great state house, in this magnificent city, practically the heart of the state, there should be no lack of that kind of advertising on the part of the Indiana breeders of short-horn cattle. See that in the agricultural rooms of this building, in the hotels of the city and in the railroad stations you have pictures of your cattle. That is generally permitted in the West, and I think it would be permitted here. You have produced so many grand cattle in this state that they ought not to be forgotten by the world at large.

The condition of the short-horn market, as well as the condition of the market for all other breeds of cattle, has not been very good for the past year. Commercial cattle have been down. The great range country

has had a very disastrous year. In the last two years commercial cattle have suffered greatly. There has been complaint, in the first place, of bad railroad service. Then we had a great strike in Chicago in the stock yards, and that had very disastrous results. However, this is the time when short-horn breeders ought to take hold of everything concerning proper breeding with firmer energy. This is the time when you can discard your surplus cattle; this is the time when you can put your house in order, because these conditions come in waves, and there is as inevitably a flood tide as there is an ebb tide. There is an ebb tide today, but the flood tide is sure to come, and when it does come the trade will be for short-horns. There is an increased desire all over the West to raise short-horns. It is a demonstrated fact that the Hereford cattle have not been able to sustain themselves where they have been bred for ten or twelve years in the great herds. The men owning those great herds have all determined to increase the quantity of short-horn blood in their breeding cows. It seems as though the short-horn cow is pre-eminently the mother of the whole bovine race. It has been true always and everywhere, and it is being unmistakably demonstrated in the West.

I saw a little item in the London Live Stock Journal the other day that interested me. It showed that out of twenty-nine entries in the cross-bred classes, twenty-eight of them either had a short-horn dam or a short-horn sire. The Hereford men seek the short-horn dam, the Angus men and the Galloway men following the same method. The glory of the northern part of Scotland in the production of beef has rested principally on the product of the short-horn cow and the Angus bull, or vice versa. They have what our learned professors call free potency to a higher degree than any other breed we know anything about. They improve every breed they touch. That is unmistakably demonstrated by the fact that every attempt to do without it is followed by deterioration.

Recently I was looking through some old papers and came across a little supplement I published in 1887, at the time I issued a private catalogue. I have issued one nearly every year for some years. As I looked that over, in view of my coming here, I came to the conclusion that I could find nothing better for a text than a letter which was really written me by Mr. Amos Cruikshank himself. He very seldom wrote for the public, or wrote at great length to his private correspondents; but I had the pleasure of talking to him several times and of having letters from him from time to time. This letter I printed as a part of my catalogue that year. I think it contains the sum and substance of everything that is really involved in the breeding of short-horn cattle. With your permission, I will read it and call attention to a few points:

"In the breeding of good short-horns some men have aimed at producing a good type for winning prizes; some look to breeding from a particular line of blood; some pride themselves on having a herd descended from some particular animal; some think nothing of an animal that is

not red. All these ideas have led to much notoriety, and some of them to the making of a deal of money; but none of them necessarily to the breeding of right down good, useful beasts.

"Suppose a man wants to raise a sire which more or less is intended to produce beef cattle. The animal must have a heavy, well fleshed body on short legs, a fine bone, a tendency to make the best of all the food he eats, and, beyond everything else, a stout, hardy constitution. This tendency to make the best of all it eats, combined with a hearty constitution, is the great point. No straightness of back, roundness of rib, length of quarter, well filled neck vein, general 'smoothness' or redness of color will make up for the want of a good constitution and the capacity to make much beef or milk out of a little food. When an animal combines this constitution with this tendency we may safely say that it is of a good sort, even if it may happen to be somewhat unsymmetrical. No man need look for lasting success unless he breeds from such a sort.

"The power of judging of this goodness of sort in a strange animal is not given to many men, though by experience and care most men may learn to avoid the worst kinds, and close observation will soon tell every one which are the good and bad sorts in his own herds. A certain want of symmetry need not affect the goodness of the sort, but no man can afford to breed unsymmetrical animals, and no one is likely to try, for, though this prejudice or that whim has led many a man to breed bad sorts, every one sees the need to do what he can to keep up the desirable points in the general outline of the animal. In estimating the relative value of the various points of form a prudent man will set a high value on such as indicate a sound and vigorous constitution. Hence the old-fashioned sneer about kitchen beef will not prevent the very highest consideration for a well-developed fore end and wide chest.

"The great question with most breeders is, How are we to use the mass of facts which is bound up in our herd books? Are we to go in for line breeding? Must every successive sire be of the same tribe? Or are we, while generally standing by some line of blood, to allow ourselves such liberty as we can find within these limits, or are we to give our judgment free play and take a good beast when we can find one? As a matter of theory, the latter plan is no doubt the most defensible, but in practice it has serious drawbacks. If our judgment was sufficiently well informed it might no doubt be right, but that is not often the case. In the second generation an animal has four grandparents, in the third eight, in the fourth sixteen, and in the fifth thirty-two. Everyone will admit that even in the fifth generation the individual qualities of each of the thirty-two ancestors has much to do with the qualities of its descendants. But how many breeders are likely to know the individual qualities of thirty-two animals living some twenty-five or thirty years ago? Hence, a good sire bred from a sire and dam has often proved a snare, not because nature works untruly or because like does not produce like, but because

we do not know all the elements which go to make up the animal we are using. Line breeding, too, has its particular difficulties. A sire bred from animals of his own or closely allied tribes has comparatively few causes of variation—that is, he is very potent—his capacities are pretty sure to descend; but then his capacities may be good or bad, and as any good tendency becomes strongly developed, so does any bad one. The number of 'blue-blooded weeds' which have been produced of late years since line breeding became fashionable is good evidence of the danger which is sure to come unless the system is worked by an unerring genius. Let us take the experience of Thomas Bates. He believed in his own blood beyond any other man. What was his practice? Up to 1823 and 1824 he used hardly any other than Duchess bulls, and it is said that rickety calves compelled him to change. Be that as it may, between the years 1823 and 1828 the great bulk of his calves were from Red Rose and Princess sires; between 1836 and 1843 he fell back on the Duke of Northumberland (1940), a Duchess bull, it is true, but with the double cross of a Princess sire and a Red Rose great-grand sire. From 1843 to the time of his death his calves were principally sired by Oxford bulls, some of whose recorded pedigrees would not now entitle them to registration. He was too wise a man to be bound by his own theories.

"The best plan seems to be to take a middle course—in a general way stick as much as possible to animals bred by men who have successfully carried the ideas at which you aim—and if possible keep to animals with some blood connection. Similarity in blood is of advantage, as it reduces the tendency to sport, as botanists would say; but do not let a desire to have similar blood confine your judgment to too narrow a circle. When you have a good sort do not let any prejudice or whim persuade you to part with it. That breeder is the best off who has a herd of sufficiently good character and enough variety of origin to enable him to keep the best of his own produce for his own use without danger of lessening constitutional vigor; but before a man tries to breed his own sires let him be very sure that he has the right sort of stuff to work with.

"This opinion is no mere theory. It expresses the practice of most of the successful men of old, and in the few instances in which it has been carried out in modern times its safety has been proved. When the men of old found that they had not what they wanted within their own herds they never hesitated to make a change.

"The details of cattle management must vary with soil and climate, but there is one general principle which ought to be kept in view everywhere—let your plan be as nearly as possible nature's plan. Do not give unduly stimulating food; do not fatten at one time and starve at another; do not expose unnecessarily to extremes of climate, and do not coddle your cattle.

"Breeders of short-horns have nothing to fear so long as they keep utility in view. Let the proof of the pudding be always in the eating."

Mr. Cruikshank asked why there was such a universal demand in this country for red cattle. He himself had been forced to a certain extent to answer the demand for red cattle. It seems to me in the little article I have read is embodied nearly all the practical sense I have ever read on the subject of short-horn breeding. I think there is one application the American short-horn breeder ought to make. After Mr. Cruikshank had produced Champion of England and Roan Gauntlet he stuck entirely to his own herds, and reached in that way pretty close to the danger line. Some years ago, in a conversation with me, he said: "I have got to the point where fresh blood must be introduced, and (pointing to Mr. Duthie and myself) you younger men must take up this great work."

I fought pretty vigorously from along in the seventies to eighty-six and seven against what I thought the greatest danger the short-horn breed was being subjected to—line breeding, which had been preached by the Bates men. I was disgusted with it, and so fought it as well as I could. The cattle were being rendered unfit to compete out in the Western country with the sturdy Herefords and the short-legged Aberdeen Angus. They were being practically wiped out so far as butcher's animals and constitutional vigor were concerned. That was owing to the long continued line breeding. In addition to that it was producing an artificial estimate upon which to base the value of short-horns. Cattle were ranked then, not at all upon their individual merits, but upon a certain paper value which they had. They would not at all stand the test of common sense. My theory is that whenever fashion ignores common sense it is time for common sense to ignore fashion. We are at that point today, and I propose to try to do what I can in defense of the real interests of the breed. The trouble today is that we are valuing the cattle too much by what they are called at the bottom of the pedigree. We take an animal bred by Hector McKillup at some insignificant little place in England and rank her above any of the old families we have in this country. Is it because she is a better animal? No. When we get the Scotch type, which I think is desirable; when we get the constitution and the tendency to make the most of its food by two or three crosses on top of those old American families, we have as good cattle as any bred in England or Scotland.

I am absolutely in favor of doing away with the present nomenclature. We call an animal Young Mary, or some such name, when she has no more of the blood of Young Mary in her than of eight or nine other animals. You might as well put a pint of salt water in the river at St. Louis and expect to taste it at New Orleans. We see at sales all over the country superb young animals going into the ring under the name of Young Marys or something of the kind, when they belong to good old families. In the herd books stop using the name of the imported cow. Give two or three of the top crosses, which is, of course, a key to the pedigree, and no longer in recording pedigrees say the animal is of im-

ported Young Mary or imported anything else. I think they have been long enough on American soil to warrant us in stopping these allusions to the importation. That plan will untie our hands.

At the St. Louis and Chicago shows, where the cream of everything was found, one of the most beautiful animals I have seen for years stood first in its class. It was a yearling, and the owner said he would be glad to sell it for three hundred dollars, although he had been pricing some other animals not so good at one thousand dollars. At the bottom of the animal he priced at three hundred dollars was Young Phyllis. Now, what was the matter with Young Phyllis? One animal traced to some far-off animal in Scotland and the other to Young Phyllis, and the latter was the better animal, although offered at a price away down below the other.

We should not lose sight of the underlying merit and go in entirely for the paper part. A dozen leading breeders in this country could remedy this whole thing. I can pick out a dozen gentlemen in this country who, if they would take a bull bred as I have said, tracing on the side of the dam to the old fashioned cattle, which were the best of their kind at the time they were imported, and which were as good, many of them, as those imported today, this thing would disappear. I have asked some of them why they did not do it. They say when people come to their herds to buy animals they want the straight Scotch sire. What is a pure Scotch sire? There is no such thing in the world. They all have a mixture of Bates and other cattle in them. There is no more pure Scotch than there is a pure Ohio or a pure Indiana strain of cattle. It is absolute nonsense and we want to broaden the field and recognize merit. We need all the good bulls we have, and a great many more. There are too many poor cattle being bred, and if we let down the bars and let everybody's hands be free to use rightfully and properly all the ocean of good blood there is in the herd book we would do much better in the way of breeding good cattle.

The American Short-horn Breeders' Association is a representative association, and it is a question whether they will perpetuate in the herd books this policy, which, by the use of the name of the imported cow continues this discrimination, or whether they will adopt a better method. I have been trying to ascertain what is necessary to broaden our trade with Mexico, the Argentine Republic, Cuba, and many other places. I find this to be one of the barriers. We ourselves put an artificial distinction upon some of our cattle and thereby drive away would-be purchasers.

While Missouri is supposed to be well supplied with short-horn cattle. I have had access to some statistics which show that but five per cent. of all the cattle in that state have short-horn blood. I don't know whether your state can show a better record. We need all the good cattle here at home, but when we come to send them abroad we find that Argentina has acted more wisely than other countries. She will take only the best

cattle; she will not take calves, she will not take young things that have not become developed. The broad-gauge men of England today are complaining bitterly of the injury that is being done to England by the constant influx of her very best cattle into the Argentine Republic. We have no cattle to spare for Argentina and we have none to spare for Mexico. It seems to me the breeders of Southern Indiana ought to have their eyes opened to the possibility of our Gulf States. They are crying for short-horn cattle in those states. There are difficulties in the way of sending them there. They must be inoculated and they must be acclimated; but to Americans difficulties are simply things to be overcome. I do not see why there should not be an enormous increase in the trade of Southern Indiana with the Gulf States. The distance to ship is short, and Alabama, Louisiana and Mississippi are all crying for something to take the place of the scrubs that prevail there.

Live-stock husbandry is the foundation of everything, for without it there is no possibility of maintaining the fertility of the soil. The land of a country devoted especially to one crop becomes worn out. The land in the Gulf States has been worn out, and a great deal of it is no longer cultivated, but is being covered with scrub pine. In the Northwest, where most of the country was devoted to wheat-growing, they are beginning to appreciate the fact that live stock raising is necessary to maintain the fertility of the soil. My own state has learned the lesson that they can not exist simply by growing wheat. There are places where wheat has been raised continuously for twenty to thirty years, until the soil has been absolutely robbed of fertility, and now they are going back to grass and cattle.

I want to urge upon the breeders present to do everything possible to maintain the intrinsic, absolute merit of your cattle. Discard all fashion and artificiality. Short-horn breeders, as a rule, are level-headed men, yet some of them, when they come to choose sires for their cattle, have as many whims as a lady choosing a bonnet. A man came to see my herd some years ago, and after looking it over very carefully said: "I have not been able to find a single bull here that is absolutely without any white hairs." I told him I sincerely hoped he never would find one. Roan is the distinguishing mark of a short-horn. It is the hall mark of the short-horn breed and therefore I esteem it very highly. I believe cattle bred for a number of years simply for the sake of the red color will be sure to deteriorate. The fairs and practical use everywhere have demonstrated to the satisfaction of the most enthusiastic red maniac of twenty years ago that there is nothing in that, and now we have no trouble about the roans; we no longer find men discarding animals because they have white hairs. We have worn out that fallacy, and we will wear out the fallacy that we have to go back to the Scotch all the while. I believe in American men and I believe in American cattle, but if we can not reach the point where we can go on breeding cattle here as good as

are bred anywhere else in the world, without a constant recourse to the herds of Great Britain, we will have to admit we are failures.

Last winter in Washington I had a conversation with the Argentina Minister. I was speaking to him of the possibility of getting some of their quarantine regulations changed. He then asked me why they should come to us for cattle when we go constantly to Scotland for ours. That is the position they take. "Who bloweth not his own horn, his horn shall not be blown." That is the common sense of it. Let us blow our own horn! Native cattle that have been on this soil for seventy-five years have not deteriorated. While we may desire new blood and may desire to change the type, as we did in the eighties, having done that we ought to stand up before the world and say we can maintain what we have achieved.

No one talks about the American man deteriorating, although I believe I did hear of one Englishman who said the American men were going back to the type of the American Indian; that they were going back to the long, lean, high-boned type. That may be so, but at any rate it can not be said of our short-legged short-horn cattle.

Short-horn cattle have followed the English-speaking people all over the world. There is a humanity about short-horns that is lacking in other breeds of cattle. An attachment exists between the man who owns short-horns and his cattle that you do not find anywhere else. The Herefords and the Angus cattle are simply beasts—good ones, no doubt, under certain conditions and in certain localities—but the short-horn cattle are members of the family. I never was chased out of a pasture by anything except an Angus cow. There is a wildness about that breed that does not exist in short-horn cattle. These breeds do not answer the purpose for general farmers' cows; they are not animals that can be handled by the family.

We have a very remarkable Secretary of our State Board of Agriculture in Kansas. He is fond of generalizations and of burrowing into things. A year or two he took the records of the old fat stock show in Chicago. That show was carried on for about fifteen years. All classes of cattle were put in the final test. He took the statistics of that great show, tabulated them, and arrived at some general conclusions I think mean a great deal. Individual examples of maturity and such things do not amount to much. He prepared tables for thirteen years. He took all the Hereford, Angus, short-horn and other breeds between three and four. The only two that ran at all alike in the display made and the number shown were the Herefords and the short-horns.

The three-year-old Herefords averaged in pounds 1,903, in days 1,271, and showed a gain per day of 1.50 pounds.

The short-horns averaged in pounds 2,115, in days 1,324, and showed a gain per day of 1.53 pounds, a gain of .03 per day more than the Herefords.

The next class was the two-year-olds. The Herefords averaged in pounds 1,642; in days 996, and showed a gain per day of 1.65 pounds.

The short-horns averaged in pounds 1,765; in days 978, and showed a gain per day of 1.81 pounds.

The yearling Herefords averaged in pounds 1,338; in days 685, and showed a gain per day of 1.96 pounds.

The short-horns averaged in pounds 1,389; in days 650, and showed a gain per day of 2.14 pounds.

Thus you see that in each of these three classes, taking the hundreds of animals that were exhibited, there was a uniform story that in gains per day the short-horns outranked all the others. I think that justifies the universal popularity of the short-horns. It was an experiment on a large scale, and the figures I have given show the general average of all the breeds shown. That explains why the Herefords are confined, so far as England is concerned, to the little country of Herefordshire. The Aberdeen Angus is confined to Scotland, but the short-horn is found everywhere—it is the cosmopolitan breed—so I think we can safely stay with it. Properly fed, properly bred and properly handled, there is no possibility of a man losing money with a good short-horn herd. My experience in the practical handling of cattle covers pretty nearly my whole life. The first animal I remember was when I was four years old. I have never forgotten being set upon the back of a large, white short-horn bull. While men have failed for many reasons—speculation, improper breeding or the chasing of some iridescent dream—even with the low prices of this year there is a good profit underlying the raising of good short-horn cattle in a sensible way.

Mr. Robbins: I have been much interested in what the speaker has said. I don't think there is anything of more importance confronting us than the problem of how to discard this family name. If Colonel Harris will take a little more time to tell us how to go about doing away with it, I am sure we would all like to have his views. A few of us have talked this matter over, and have even gone so far as to tabulate our pedigrees in our private catalogues. When we speak of the matter people usually say: "Well, our short-horn association will not record that kind of a pedigree, and we don't want it."

Senator Harris: You can not record very well cattle with a tabulated pedigree. Space will not permit it. You can not increase the bulk of your columns, but you can give the name of the animal, its age, and the name of the breeder; you can say it is by a certain sire, by a certain dam out of a certain sire, and stop there. Leave out such words as "tracing to Young Mary." You gentlemen must adopt that rule. The Short-horn Association will do whatever its stockholders ask it to do. That should be the first step, I think, in this reform, just simply to drop discriminating or distinguishing cattle by the name of a cow imported sixty or seventy years ago.

Mr. Walter Quick: As Mr. Robbins has said, a number of the breeders have tabulated the pedigrees of their cattle. We had a little experience with our first tabulations. We thought there was just as much importance appertaining to the sire's side of the pedigree as there was to the dam's side. Consequently we did not give any more importance in our tabulation to the dam's side, which was the lower half of the tabulation, than to the sire's side. In other words, we did not say "tracing from imported Young Mary," on the lower half of the tabulation, leaving it as we do the upper or sire's side of the tabulation. The question was put to us time and again, "What family does this animal belong to?" We would tell them they could find out the family when they got the certified copy. Of course we could give the family name, but they would say they might not remember that. It would seem, therefore, that the initiative must be taken by the American Association. It can not be otherwise. It may be I am putting it a little strong to say initiative, because the initiative necessarily must come from the stockholders and the breeders, possibly from such associations as this. If this association should pass a resolution voting that it is the sense of the members that the pedigrees be printed in the future as Colonel Harris has suggested, it would have its weight, and if every other state association would do the same thing it would have still more weight. You can understand why the Messrs. Robbins have printed their catalogues with two pedigrees. On the one side is the tabulated pedigree, and on the other a pedigree which gives only half of the breeding. If you study a tabulated pedigree you will find there is only about one-eighth the animals in the five generations mentioned. In the ordinary pedigree, which is not nearly so complete, it seems the buyers, especially the beginners, find great satisfaction. That has caused us to feel that perhaps we made a mistake in not printing double catalogues. We have printed our fourth catalogue with all the pedigrees tabulated, and we shall follow that plan. I don't know how soon we can drop the fact that the female side traces to a certain imported cow, but probably not until the Herd Book stops tracing to So and So.

Chairman Christian: We have the President of the American Association here, and would like to hear from him.

Mr. S. F. Lockridge: Colonel Harris's views are my views on this subject. We served a long while ago on the board, and discussed this question and various others, on which we usually agreed. This matter that you speak of has often been up before, and has been discussed by other breeders. There are some difficulties in the way of getting a true system of breeding. I think it will be very obvious to you that the tabulated form could not be accepted because of the space it would take. We publish anywhere from fifty to seventy-five thousand pedigrees a year. We have to make each pedigree as short as possible, and refer to

other pedigrees in previous columns. I would like to do away with the imported cow with the family. Short-horn cattle originated in Great Britain, and we still go there for our fresh blood, and the question will nearly always be asked when a man comes to your herd to buy, "What is the imported cow?" You will necessarily have to tell that, because it is a matter of history. I think we could easily do away in our registration with references to the imported cow. I do not know whether that would do away with this feeling or not. It has struck me that the tabulated form of pedigree is the best way of getting rid of that trouble. If the breeders, in issuing their catalogues, would use the tabulated form and make no reference whatever to the imported cow, it would do a great deal towards straightening this matter out; but I do not see how we who are publishing a herd book could publish a tabulated form. It takes a whole page to make five crosses in a pedigree alone. We have run as high as seventy thousand pedigrees in a single year, and in a short time there would be a multiplication of books.

This is a question that has engaged my attention a great deal, and if anyone can suggest anything that will help solve the difficulty I am sure the board of directors would like to have it. They are willing at any time to take up these matters, because they are only representing the views of the stockholders. The only question is to find the ways and means of accomplishing it.

I am like Colonel Harris in this: I would like to have an American short-horn. I can not see why it is always necessary for us to go back to Great Britain, and I can not see that the imported animal is worth any more intrinsically than the one bred right here at home, if the individual merits are equal. It is our own fault if we do not make a standard of American short-horns. We have the power to do it and we ought to do it.

Mr. Robbins: When I see a good animal the next thing I want to know is how it is bred, and the only thing for me to do is to tabulate the pedigree. Why do we have a short-horn association? To furnish us information about our short-horn cattle. We have got to turn over a new leaf. If you simply drop the imported cow from the present form of pedigree and make the record that much shorter, I do not believe it will accomplish much. This is a question, I think, of very great importance, and I do not think it should be put aside lightly.

Mr. Lockridge: I think Colonel Harris struck the idea when he said it was in our own power to do this. I believe if ten or a dozen of the best breeders in this country would throw aside these prejudices and breed good cattle everybody else would join in. All the breeders in general want is some one to lead them. If the leaders will get together and agree to make the change the question would be solved. That is the only way I think it can be solved.

Mr. George W. Thomas: We would have to go to a great deal more trouble to get to the foundation of our pedigrees. We would have to look up our imported cows through the pedigrees. We now get these through our histories of imported cattle. According to a rule of our association everything has to trace to imported cows before they can be entered in our herd book. That rule would have to be changed. It seems to me, however, the main trouble would be in getting at the foundation of our pedigrees. We get that through our histories, and I don't see how we could, without a great deal of work, get the facts unless we refer to those imported cows. I don't see that it would shorten the pedigrees much to drop the reference to the imported cows.

Mr. Walter Quick: Mr. Lockridge has said that the only way to do this is by tabulation. However, he said that is impossible in the Herd Book, because it would make five books instead of one. That being the case, if we can not have a whole loaf it does seem desirable to take what we can get. We would aid the herd book solution if we would drop any part of the pedigrees. There would be something gained in printing by dropping the imported cows. I doubt not Colonel Harris has considered this carefully, and when he made that recommendation he probably took into consideration the fact that it would be impossible to print the pedigrees tabulated. Therefore it seems to me it would not be inadvisable for this association to pass a resolution giving the sense of this association and of the Indiana breeders along this line. This would be a recommendation to the American Association. A start has to be made some place. This will set people to thinking about the matter, and may lead to having the books printed eventually in the way Mr. Lockridge spoke of. It might also lead eventually to the dropping of the name of the imported cow. It is time we got rid of that old fallacy. I have in mind to offer the following resolution:

"Resolved, That the Indiana Short-horn Breeders' Association, in its annual convention assembled, recommend to the American Short-horn Herd Book Association a modification of the present form of recording pedigrees, and that final reference or tracing to imported cows (naming the cow) be eliminated."

Mr. Donley: I am a beginner in the business of breeding short-horn cattle, but I am in favor of following the old adage which says, "Let every tub stand on its own bottom." We new breeders who go to sales and see Mr. Robbins or Mrs. Meredith, or some person we regard as a good judge of short-horns, giving two or three times as much for an animal referring back to an imported cow as they will for one that does not so trace back. I have had men say to me, "Donley, is this a pure Scotch heifer?" and if I said it was they would slap on two or three bids, while they would be ready to quit at that time if it was not a pure Scotch animal.

I think the proper thing to do is for some of the prominent breeders to lay aside such fads. Make this thing practical and don't worry about the tabulation or the paper part of it.

Mr. Douglas: If we pass this resolution will it not strike a body blow to that part of the Herd Book of the American Association which provides that no animal shall be entered that can not trace to an animal that has a certain place in the English Herd Books?

Senator Harris: When the new association was formed it was decided to admit into the future records of the association all animals already recorded. We admit all the English importations provided they trace to column 20 of the English Herd Book. We do discriminate against some families. Of course on the other side they do admit new families. While I was one of the directors of the American Herd Book I opposed admitting those new families. In the eighties the Scotch created new families in order to import them. The Scotch cattle had a want of popularity at that time, and I did not think they ought to be allowed to unload that kind of cattle on us. England is a little country. When an application is made for a new herd the directors can send some one out to examine it. They are pretty careful to examine the foundation stock and all about it. That is impracticable in this country. England is full of what are called "non-pedigreed" cattle. All the great dairy herds around London and Liverpool are of this class. At a recent dairy show a cow of that class took the champion prize. They have the foundation there. Mr. Booth used to say that five crosses of a pure bred bull on any dairy cow made a short-horn. I believe five crosses of pure bred bulls on any good market cow makes them to all intents and purposes short-horns. The question with us is how we shall properly rehabilitate the old breeds of cattle that run away back past recent importations. There are old families in Ohio and Kentucky that were originally selected with more care with reference to their purity of blood than any of the modern importations. I think we ought not to throw away all that magnificent foundation.

Mr. Donley, however, has put his finger on the sore; he got right down to the nerve. This thing of whether you tabulate the pedigrees or whether you drop the imported cow is not the thing; but let a dozen of the prominent breeders take cattle of this kind and use them at the head of their herds, and the thing is done. When I had my herd they were all imported from Mr. Cruikshank's herd. After a while I saw the necessity for a change. I did not like Mr. Cruikshank's cattle, after the use of Cumberland, especially. They began to get small and weak, and were not as sturdy as cattle bred from other sires. I got a Golden Drop cow by a Bates bull, and I bred my Cruikshank bulls to this cow, and then used her blood on the whole herd. They were the best cattle I had, and when I dispersed my herd they brought the highest price.

I think the resolution before this body ought to be passed. Of course the Short-horn Breeders' Association is a representative body and want to do what the short-horn breeders of the country want them to do, so far as is consistent and right. They want to know what you think, and I believe a resolution of this kind might very properly be passed. That is a step, and it shows to the association publishing the herd book that you no longer think it the proper thing to refer to some old imported cow fifteen crosses back.

Mr. Robbins: In order to more properly get this before the meeting, I move the adoption of Mr. Quick's resolution. (Seconded.)

Mrs. Meredith: I do not approve of the resolution and I shall vote against it. I say this with great hesitancy in the presence of those who have had more experience than I have had. We must remember that a pedigree is a purely artificial thing. If we put aside the imported cow what better have we to suggest? The pedigrees must be traced somehow in order to make it a good, standard short-horn pedigree. What better have you to suggest than the imported cow? We must admit that the association on the other side takes great pains to keep the record of the eligibility of the cow. I wonder how many here remember those two little thin books on "Unfashionable Crosses." Were they not dreadful things? Now, if we do this we will find there will be a standard and somebody will get up books like these little volumes on "Unfashionable Crosses."

Senator Harris: I am interested in what Mrs. Meredith says, and I should consider it a very great disaster if anything so absolutely horrible as a revival of Haley's "Unfashionable Crosses" should be brought about. This would not do it. This does not take anything out of the herd book or admit anything into it, but simply does away with a little underscoring we are in the habit of using. The information is all in the herd book. You still have all the information you need in the herd book, but you do away with the artificial distinction I spoke of. It is always interesting to know the history of every importation. Nothing I know of is more interesting than Mr. Warfield's History of Imported Cows. That is still of record, but we no longer recognize the importance of the imported cow. That is, we no longer give an undue proportion of value to the imported cow in the pedigree. To that extent it puts things more upon a level and gives the tabulated pedigree a chance to become more popular. Of course lack of space prohibits the association publishing tabulated pedigrees.

President Bowen: The resolution, if passed, will not bind the American Association at all. You have the registration of the animal, but in place of tracing to some imported animal it gives the information to the party that the animal has the blood of that noted animal in it. That is all that tracing to the imported cow does now.

Mr. Williams: I do not see that anything will be gained by that until the discrimination in the show ring and in the barn yard is dropped. It would only lead to confusion. Possibly not to exceed one-fourth of the men who attend sales, or of the prospective purchasers who go to your farms have the herd book and can trace the breeding in its entirety to any certain animal. If an animal is placed in the sales ring without this discrimination probably not more than one-fourth of the buyers there had familiarized themselves with the breeding of the animal through the herd book before the sale. This discrimination going on in the sales ring the new breeder would wonder why such was the case and it would start an inquiry. If the pedigrees were still carried on and catalogued the same as ever they could readily see why discrimination was made. This discrimination can only be stopped by breeders themselves. People will seek out and read and study before going to a sale, and will trace the breed back to the imported cow.

It seems to me there is another objection to this dropping of the imported cow; it would necessitate the secretary of the National Association looking up the pedigree of an animal before recording it. The leading breeders and purchasers of the country can do more to stop this discrimination than anyone else, and I see nothing to be gained by adopting the resolution.

President Bowen: If I thought this would bring about the desired result, I would be for the resolution. I don't see how it can bring about anything except a little more work for the party looking up the pedigree. The discrimination is brought about in the sale of the cattle. The pedigree only gives the sires and dams. To be sure, it adds that "tracing to Young Mary," or to some other cow, but what is that if the imported cow was not much? I know some imported cows I would not give very much for, and some I would not have on my place. To be sure, some people might give something for them because they were imported, but they would not be showing good judgment in doing so. The American people as a rule desire to be humbugged, so the discrimination must be brought about by the breeders. They must discriminate between cattle. If they do not know a good animal when they see it they ought not to be in the business. I say that, knowing that a great many people are in the business who do know good cattle and go on breeding in the line we are trying to remedy. They do it for the simple reason that they have to in order to hoodwink somebody else, or else they do not make any money. As long as we as breeders demand animals that trace to imported cows, or as long as we demand pure Scotch, just that long people will be breeding pure Scotch animals, and no longer.

Mr. Robbins: I did not move the adoption of the resolution because I thought it was what we wanted, but because I thought it was the

proper way to get it before the meeting. My idea is that we ought to find some way to get up tabulated pedigrees. That is the only way I know of to get all the information concerning cattle. You can easily finish your information if you have a tabulated pedigree in the first five crosses. I would rather furnish storage for volumes I might never need than to work the pedigrees over and over again. I believe our short-horn association ought to try in some way to give us tabulated pedigrees; they do the work, while the others do not.

Mr. Artemus Smith: I would like to suggest that the American Association make some rule by which anything and everything we call pure blood can not be recorded. We ought to have standards; we ought to have some bar. There are a great many record animals that do not deserve to be on the records at all. If we could find ways of breeding better cattle it would be an improvement. We only give two sires and then stop, but we give several more on the female side. I never did see any reason for that. I believe this other is a matter of more importance.

Vice-President Christian: Colonel Harris has just said we could not send a committee out to examine each herd because the country is too big. If we send the pedigree up to the American Association they must record it.

The resolution was voted on and lost.

Mr. John E. Robbins: I think we have all been highly entertained and benefited by the presence of Senator Harris, and I move that a vote of thanks be extended to him.

The motion was seconded and carried by a rising vote.

INDIANA CATTLE AT THE WORLD'S FAIR.

JOHN E. ROBBINS.

The cattle shown at the St. Louis World's Fair was made up of exhibits from Canada and the following twenty-one states, viz.: Connecticut, Illinois, Iowa, Indiana, Kentucky, Massachusetts, Minnesota, Nevada, New York, North Carolina, Nebraska, Oregon, Ohio, Pennsylvania, New Hampshire, Tennessee, Kansas, Missouri, Wisconsin, West Virginia and New Jersey. The breeds shown were Short-horn, Hereford, Angus, Galloway, Polled Durham, Red Polled Jersey, Holstein, Brown Swiss.

Ayrshire, Guernseys, Devon, Dutch Belted, Kerry and West Highland. The championships and first prizes awarded to cattle owned in the above twenty-one states and Canada were as follows:

Indiana, P. C. 6, G. C. 6, C. 9, firsts 42.....	63
Missouri, P. C. 2, G. C. 4, C. 7, firsts 33.....	46
New York, P. C. 2, G. C. 2, C. 4, firsts 20.....	28
Ohio, P. C. 3, G. C. 1, C. 4, firsts 18.....	26
Iowa, P. C. 2, G. C. 2, C. 2, firsts 18.....	24
Illinois, G. C. 1, C. 3, firsts 13.....	17
New Jersey, P. C. 1, G. C. 3, C. 3, firsts 6.....	13
Minnesota, P. C. 2, G. C. 1, C. 0, firsts 7.....	10
Pennsylvania, P. C. 1, G. C. 0, C. 1, firsts 6.....	8
Connecticut, P. C. 1, firsts 7.....	8
Massachusetts, P. C. 1, G. C. 1, C. 1, firsts 2.....	5
Canada, G. C. 1, firsts 3.....	4
Wisconsin, C. 1, firsts 3.....	4
Kentucky, firsts 4.....	4
New Hampshire, C. 1, firsts 2.....	3
Oregon, firsts 2.....	2
Nebraska	1
North Carolina	1
Kansas	1
West Virginia	
Nevada	
Tennessee	

As the Dutch Belted, Kerry and West Highland had only one herd of each and the Devons only a few entries where there was competition I have not credited their winnings to the states in which they were owned. Indiana exhibited Short-horns, Herefords, Polled Durhams, Galloways and Jerseys. In all these except the Herefords she is ahead and she won both senior championships and both grand championships for Herefords. The World's Fair officials considered the breeders' premier championship the best prize offered to a breed. Indiana won four out of a possible five. On the Short-horn exhibit we had a cash prize on every animal shown. We know of no other state with such a record.

SHORT-HORNS AS DUAL PURPOSE CATTLE AT THE WORLD'S FAIR.

WALTER QUICK.

Professor Busby telephoned me a few days ago and asked me to look up the data on the exhibit of short-horns in the dairy classes at the St. Louis Fair. He sent me a programme showing the subject he was down to discuss. He said he would not be able to attend the meeting and asked me to take his subject.

At the outset we can safely say that beyond peradventure of a doubt the short-horns were the dual purpose cattle at the St. Louis Fair. I think the subject should have been "Short-horns as Dairy Cattle at the World's Fair," as they were there to demonstrate what they could do as dairy cattle.

The American Herd Book Association appropriated ten thousand dollars for the purpose of making this dairy exhibit. Colonel Hinds was appointed commissioner to take the matter in hand and select the right sort of cattle. He selected a number of cattle from Indiana. If he had been successful in getting all the good cattle he selected in his show it would have been a wonderful exhibit and would have demonstrated a wonderful thing for our breed of cattle. But many things happened to prevent those cattle from getting there. Many of the cattle did not calve at the proper time to enable them to be shown there to the best advantage. The Jersey cattle breeders commenced a year before the opening of the exhibit, and bred their cows so they might calve a week or ten days before the test would commence. The Holstein breeders did the same. As a result of this Colonel Hinds in an article in the Breeders' Gazette shows that twenty-four head of cattle made a much greater record than was made by the Jersey cattle at the World's Fair in Chicago. The record was phenomenal from the standpoint of any work that was ever done with dairy cattle. I think we can appreciate that Colonel Hinds feels that some advantage was taken of the short-horns in this dairy exhibit. Colonel Hinds says that barrels and barrels of breakfast food was fed to the Jersey cattle, and that the experiment was not conducted along the same lines. The rations and various other things were different. He also called our attention to the fact that of the twenty-nine short-horns selected but twenty-four were permitted or were in condition to go into the test. However, the averages on the bulletins issued every ten days were on twenty-nine instead of twenty-four head.

As a matter of fact, we know that no very great attention has been given to the breeding of short-horns for exclusive dairy purposes in the United States. In some parts of the Eastern States and in the old countries short-horns are bred for exclusive dairy purposes. In various parts of England the dairy short-horns stand right at the front. I have here a little clipping taken from the Breeders' Gazette in regard to the London Dairy Show, which I think will be of special interest to us in considering this question at this time. I had the pleasure of visiting the London Dairy Show some years ago. It is conducted by the British Farmers' Association, and is certainly the greatest dairy exhibit in the world. In fact, it has become so prominent that all the world records are taken from this show.

"The exhibit of dairy cattle numbered 164 head in all, of the following breeds: Short-horns, forty-six; Jerseys, fifty-nine; Guernseys, thirteen; Red Polls, thirteen; Ayrshire, two; Kerry, eight; Dexters, four;

cross-breeds, sixteen. One set is awarded each breed by inspection, then another set of prizes in a milking competition in which the breeds compete together. Substantial prizes are awarded the winners in the milking competition, and certain cups and prizes to the best animal in each breed. The prizes are awarded in this milking competition by allowing certain points for each pound of milk, fat and solids produced and something for each ten days since calving. The prize does not always go therefore to the cow producing the most milk or butter fat. This condition occurred this year, and while one short-horn produced the most milk and another the most butter fat the prize was awarded to a South Devon cow. She had been in milk 177 days and produced an average of 57.5 pounds of milk per day containing 2.32 pounds of butter fat. The average daily yield of milk fat and solids for the leading cow in each breed is thus shown:

	MILK.	FAT.	FAT.	SOLIDS NOT FAT.
	<i>Lbs.</i>	<i>Per cent.</i>	<i>Lbs.</i>	<i>Lbs.</i>
Pedigreed Short-horns	44.4	3.70	1.65	4.01
Non-pedigreed Short-horns	58	3.63	2.17	5.02
Guernseys	34.6	5.73	1.95	3.20
Jerseys	39.6	5.60	2.25	3.59
Red Polls	56.6	3.71	2.10	4.80
Kerrys	38.7	4.62	1.79	3.60
Dexters	40.4	4.08	1.65	3.61
Cross-breeds	57.5	4.12	2.37	5.18

Of the cross breeds, the majority were of short-horn lineage. While some of the short-horns shown were registered animals, the majority were of the kind spoken of by Senator Harris as being non-pedigreed short-horns. However, they were pure short-horns.

I regret to say it is impossible for me, and it would have been impossible for Professor Busby, to have an exact report without getting it from the books of Colonel Hinds. As Colonel Hinds says in this article, nothing official has been promulgated by the test committee. I learn from the members of the board of the American Association that it is doubtful if anything ever will be promulgated. Colonel Hinds kept the record himself and has reported to the Herd Book Association. Why the official report has not been made is not known. It remains a fact, however, that the short-horns made a very creditable showing at the World's Fair. I have decided to read a part of Colonel Hinds' article on that exhibit:

"Did the Short-horn cows put up any work in this demonstration? Yes; they cleaned up and polished off all previous dairy records of short-horns in prolonged contests. Going back to history again, the brainy

men who manage the affairs of the American Short-horn Breeders' Association are entirely out of range of criticism in connection with this demonstration. It may be understood that they were unwilling participators in the demonstration. There were hardly a dozen short-horn cows on earth that had ever been pushed for a week's record, much less for a three months' record. The ability of these cattle in dairy lines was problematic. It had been demonstrated time and again that the short-horn was a superior beef animal. As an economical machine for the growing of meat of the highest quality the breed stood at the top of the pinnacle and looked around with but few competitors closely in sight. In all places where the short-horn cow had been given a show, on the farm and in the hands of the patron of the cheese factory and the creamery, the balance of her credit had always appeared on the right side of her owner's bank account. In the few tilts that she had had at the fairs and in the Columbian Dairy Test her records as a dairy cow were creditable. It stood much above the average of the cattle that the census enumerates as dairy cows. The short-horn managers knew that they represented the best general-purpose cattle thus far exploited. They felt that if there was to be a show of dual-purpose cows at the great Louisiana Purchase Exposition they should make a showing. Hence they cheerfully appropriated the bag of money necessary to carry out the undertaking.

"In the work of locating and assembling twenty-five cows at St. Louis everything connected with it was somewhat of a lottery. Records of the abilities of short-horn cows in dairy lines are not available in this country. No owner of short-horn cattle had even considered the propriety of breeding some of his best cows in order that they might produce at about the proper period to participate in this demonstration. But a single cow of the thirty-three short-horns assembled at St. Louis was in the slightest degree acclimated in that latitude. A single Missouri cow, coming, however, from many miles north of St. Louis, was utilized. Some of the cows there assembled were not expected from their previous performance to test out worthy to be classed among the twenty-five. Of the twenty-five cows entered in Class B, in which seventy cows of the four breeds entered, one was entirely overcome by the climatic conditions obtaining and at the end of the first 60 day period this cow was destroyed as it seemed apparent that she would not have vigor sufficient to live out the test. Two other cows at least were so affected by their environments that they could not do effective work. The short-horn representative in starting his twenty-five cows in Class B, which relates to dairying only, not only anticipated possible difficulties such as have already been enumerated with reference to three cows, but well knew that some of the lot, under the environments in which we were running, would turn out "quitters" and he was very glad to be able to hope that twenty of his twenty-five cows in this class would turn out creditable dairy records.

"What is the result? The records of milk flow of these twenty cows

in 120 days run from 3,796.5 pounds milk to 5,207.4 pounds milk, having a butter fat content running from 143.6 pounds to 208.5 pounds and from 337.4 pounds other solids to 446.4 pounds other solids. Their growth in 114 days of the 120 days was 41 pounds to 143 pounds. The average amount of milk produced by the twenty cows during the 120 days was 4,421.6 pounds milk showing an average butter fat content of 165.3 pounds and an average of 382.7 pounds other solids, and an average growth for the 114 days of 105.3 pounds.

"Stopping for a moment to consider comparatively this record of 5,207.4 pounds milk showing 208.5 pounds butter fat made by a short-horn cow in this demonstration and her farther record of 446.4 pounds other solids and the farther fact that in 114 days she grew 139 pounds (which is another name for stored energy for future work) and the additional fact that this cow produced her last calf February 26 and was again bred April 22, we may gather some information as to whether this cow is comparatively a good dairy cow or not, without reference to her beefing qualities. It should be remembered also that this cow was reared in Michigan and was never out of sight of her birthplace until the last week of April of this year. In the great Columbian Dairy Test, held eleven years ago and which will never be wiped off the pages of history as a mile stone along the dairy trail of this and all other countries. But three cows (all of them Jerseys) equaled the dairy record of the short-horn cow we are now considering. Climatic conditions and barn environments and all other surroundings were up and away much better at Chicago than at St. Louis. These three Jersey cows were all champions in the different tests at Chicago. Brown Bessie produced her last calf April 21, Merry Maiden produced her last calf April 15, and Ida Marigold produced her last calf April 29. None of these cows were again bred. Their 120 days' trial commenced two weeks earlier than the St. Louis demonstration and by the same token closed two weeks earlier, showing so much less period of lactation than the short-horn. Brown Bessie gave 4,768.6 pounds milk, showing a butter fat content of 237.3 pounds and 436.9 pounds other solids and grew 88 pounds. Merry Maiden gave 4,006.2 pounds milk, showing a butter fat content of 219.5 pounds and 372.0 pounds other solids and grew 39 pounds. Ida Marigold gave 4,434.1 pounds milk, showing a butter fat content of 212.9 pounds and 401.9 pounds other solids, and grew 69 pounds. From all of the above we must conclude that the short-horn cow we have been considering, 16th Belle of Trowbridge (Vol. 43, page 637 A. H. B.) must certainly take high rank as a dairy cow and that at least four out of five of all of her associates by their performance in this demonstration have proved themselves dairy cows."

The American Association board was not in any way to blame for failure to have this report made. Colonel Hinds gives this report in the November number of the Breeders' Gazette, after having prepared his

report to present to the Herd Book Association. Now, there is something of advantage we may draw from this. I can not refrain from making the remark that perhaps we are not giving enough attention to the milking qualities of the short-horn. I believe it is our paramount duty to see that short-horn cows are given the proper sort of ration for the production of milk of a rich quality, not alone from the fact that we want to increase the value of the short-horn as dual purpose cattle, but we will get our return as breeders in the immediate calf that is being suckled. You can not expect a cow to give the right quality of milk on a diet of corn; and you can not expect her calf to do as well as if she was given the proper sort of a ration for the production of the right quality of milk.

It would seem advisable for us to consider these things. It is difficult for us to understand the great value of the dual purpose short-horn cattle in England. The difference is very great. They have small bones, a smaller head, and a little longer legs, are less beefy and produce better milk. They stand right at the front as dairy cattle. Those that are imported to us would not give us satisfaction as beef animals if they were from the dairy cattle of England. A great many of the cattle in the United States are of the dairy class, and the dairy production of this class can be brought back to the old position they used to have.

Adjournment.

THIRD SESSION.

The convention was called to order at 7:30 p. m., Wednesday, January 4th, President Bowen in the chair.

The chairman appointed the following Committee on Nominations: T. J. Christian, J. W. Donley, and John E. Robbins.

WHY SHORT-HORNS ARE THE BEST CATTLE FOR INDIANA FARMS.

MRS. VIRGINIA C. MEREDITH.

Why short-horns are the best cattle for Indiana farms.

I will name twelve reasons why short-horns are the best cattle for Indiana farms—others may be easily given.

First.—Because the farms are comparatively small, with a rich, fertile soil, well adapted to the heavy beef breeds, and well watered.

Second.—Our farmers are generally engaged in general purpose farming—they are not dairymen nor feeders.

Third.—The best beef markets are near by; Chicago, Louisville, Cincinnati, Pittsburg, Indianapolis.

Fourth.—Many railways render shipping easy.

Fifth.—Better feed for making beef and milk is produced nowhere; bluegrass, corn, oats, clover and—alfalfa, shall we add?

Sixth.—The old time high grade short-horn of Indiana was profitable before the dairy cross was made.

Seventh.—A better farmer's cow does not exist than the short-horn—heifers for milk, steers for beef.

Eighth.—A better steer than the short-horn has never been bred.

Ninth.—High class herds are well established in the State, making breeding stock easily accessible.

Tenth.—Indiana bred prize winners have in every principal exhibition of the country demonstrated that conditions here are favorable to the breed.

Eleventh.—The Indiana farmer lives near the great school of beef production, and may attend the International and learn its lessons.

Twelfth.—The short-horn breeders of the State are liberal in encouraging the local development of the breed by offering special prizes for Indiana bred cattle exhibited at the State Fair.

The business to be profitable requires an investment in courage and patience as well as investment of money in cattle. The cattle must become part of a plan of farming for a long period of years. One must farm as if one expected to live forever. Farming goes on forever, and our part in it must be carried on with fidelity. I was in a \$5,000 home not long ago that had been paid for by the maturing of a 15-year endowment policy in a life insurance company. A comfortable home, but can you not believe that it took courage and fidelity to a purpose to pay those fifteen successive premiums out of a meager salary? An investment in cattle must have the element of time provided for, if success is to come—it is the accumulated benefits that count. Beef breeds of cattle can not be profitable except they have good pasture—and good pasture is itself a matter of years—of a long period of time.

If one asks what is the trend of the beef markets today—asks what is the outstanding point in the situation—the answer comes clearly, unmistakably—the demand for the ripe yearling—and he ought to be profitable, for a penny saved is two pence earned and the steer that does not go to the market until two or three years old often has pounds laid on and then lost. When these pounds are laid on for the second time each pound represents the cost of making two pounds. There is then a practical argument in favor of the ripe yearling pushed from birth to block. Can any animal sell anywhere for six or seven cents, unless he carries the blood of some pure breed? Assuredly not. Can the farmer—should he—raise the calves which later he markets for beef, or would he better allow the man on the ranch to raise the calves, while he feeds and finishes them for market?

Perhaps after all the essential question is—what kind of farmer are we thinking of? One of our agricultural journals recently displayed in its columns this suggestive question: "Are you a farmer or a soil robber?" The answer will be yes or no according to the ratio between the acres and the cows of the farm. But it is not enough merely to keep cows; the kind of cow determines the direct profit—of course the indirect profit of improved soil is important—but we want both the direct and indirect profit.

What does the farmer invest in his cow? Feed, shelter, care and a purchase price. The purchase price usually indicates the quality of the cow, that is, the amount and kind of pure blood she carries. It would be easily demonstrated that the ratio between the purchase price and the amount invested in feed, care and shelter is a shifting one. At the end of five years, ten years, the greater part of the investment is in feed, care and shelter—but unchanging and immutable is the potency of her breeding, her quality as represented in the purchase price, as a factor in profit and loss. Our farmer will find then, if he invests \$1,000 in feed, shelter and care, that the supremely important thing in the transaction is the purchase price of his cows; and it is for him imperative that he know positively which breed is best for him on his farm. Quality inheres in breed, and can not be found apart from it. No seven cent beef is sold anywhere except it carries the blood of some pure breed. The margin between the three cent steer and the seven cent steer is wholly a matter of pedigree. The profit which the farmer expects on his investment in feed, shelter and care depends upon his judgment in paying the initial purchase price for his cows and the sire of their calves.

In this connection I recall something I once heard Mr. Billingsley say in an institute: "Go home, marshal your live stock in a procession, and as it passes before you ask yourself this question, 'Does this live stock represent my intelligence?'"

In order to induce the farmers of Indiana to keep short-horn cows, pure bred or high grade, we must preach the gospel of their quality, their ability to make baby beef of high quality at an economical cost. We must preach the gospel of continuing with the cattle, courage and patience. We must learn and give out generously the truth about feeding and care.

The most practical plan presented in regard to co-operation among farmers was published in the Breeders' Gazette of December 7 and proposed by Mr. John Thompson, of Iowa, and I hope that our American Short-Horn Association may find it possible to do some effective work along the line suggested by Mr. Thompson.

Mr. Lockridge: I feel that I can add very little to what has been said by Mrs. Meredith on this very important question. When I received the programme of this meeting and saw that I was expected to lead in

the discussion of the subject assigned Mrs. Meredith, I felt that my part of the duty would be very light, because I was sure she would cover the ground so completely there would be little for me to do. I think you will all admit she has done so.

I think the short-horn breed of cattle is the best, not only for the Indiana farmer, but for the American farmer. I think the farmers of Ohio, Iowa, Missouri, or any other state where domesticated animals are bred, would be benefited by the use of short-horn blood in their herds, as well as the Indiana farmer. It seems to me this is a fact so well known and accepted by everybody that it is a difficult matter to discuss it. I think the short-horn is the best breed of cattle for the American farmer, for two reasons: First, because of its dual purpose characteristics, and, second, because of its great ability to adapt itself to every condition of environment wherever domesticated animals are bred.

Our shows of recent date have proven very conclusively the great ability of the short-horn to produce milk and butter. This was shown especially in the fairs held at Chicago and at St. Louis. Our fairs everywhere show what the short-horn can do as a beef producing animal. The farmer, as a rule, is a man who has a small area of land and he is not able to own an animal especially one that will produce butter and milk; he wants an animal that will produce both, and we know there is no animal of the bovine kind on the face of the earth that will do both these things so successfully as the short-horn. The short-horn will produce all the milk and butter the farmer needs, and at the same time will produce a calf that will make the very best beef on the market.

Senator Harris spoke this afternoon of the first short-horn he ever saw. The first short-horn bull I ever saw was one called Gold Dust, a light roan animal bred by George Bedford, of Kentucky. I was a little fellow of about five when I first saw that bull on a farm between my home and my grandfather's. At that time and for years after we had in this State nothing but short-horn cattle. When I commenced feeding steers all the steers I got were high grade short-horns, and I wish to say now that the steers I started to feed twenty-five and thirty years ago were fifty per cent. better than they are in Indiana today. Why is that? At that time there was no beef breed known in this country except the short-horn breed. At that time the short-horns had been in this country from fifty to seventy-five years. Mrs. Meredith's father, the late General Meredith, and Dr. Stevenson, of my county, imported cattle into this State sixty years ago. The Hereford was not known in this country, nor were the various breeds of black cattle; but we bred the short-horns on the grade cows of the country and upon themselves and produced a class of steers that we have not today in this country. I will say by fifty per cent.

I believe the short-horns are the best cattle we have. We had a show at St. Louis this fall. Dr. Quick spoke of it this afternoon. It was not

altogether satisfactory, but it did prove what the short-horn can do as a dual purpose animal. I wish to correct Professor Quick in one respect. The American Association did not enter the dairy show. We entered the dual purpose show. We declined to enter the dairy show, so he offered us the dual purpose class and we entered that. That was a success except in the case of the calves. Conditions were not carried out as agreed upon by the authorities, and our calf show was a failure. Twenty-five per cent. was allowed us for the calf. The intention was to have nurse cows to push the calves forward. They refused to allow us to have nurse cows, and a great many of the calves died. We did establish the fact that the short-horn is a dual purpose cow. The cows we had down there gained over one hundred pounds and made the greatest record ever made by short-horn cows anywhere. We claim the short-horn will give the farmer all the milk and butter he needs, and some to spare, and then will make a first class beef animal if he wants to make a beef animal of it. I don't know that I can say anything more on the subject, for I am sure we all agree as to the merits of the short-horn in this particular.

Senator Harris: I was very much interested in Mrs. Meredith's statement of reasons why the short-horn is the best cow for the Indiana farmer. There is a little broader way in which that question can be put that might touch upon a point she only alluded to. We might ask the question, "Why is the short-horn the best for farmers everywhere on land worth from sixty dollars an acre and up?" Some years ago land in Eastern Kansas began to go up to fifty and sixty and seventy-five dollars an acre; and, while it had seemed a very simple proposition to raise cattle on land worth ten or fifteen dollars an acre, often helped out by adjoining lands belonging to people in Indiana and elsewhere, when it reached the high figures spoken of it was more difficult. With all the claims that are made for the other breeds, my experience and observation lead me to believe there is no class of cattle which have an equal degree of early maturity. The only way to make these farmers see the value of the short-horn for that sort of land is to demonstrate its worth to them. What convinced me of the value of these animals for such high priced land was the production of baby beef. I found it was better to have the calves come in the fall and let them go through the winter with their dams, and just as early as possible begin to teach the calf to eat. Weaning on my farm was not a very painful process, because when I was trying to feed baby beef steers they left their mothers with comparative indifference. I had them on practically full feed before I attempted to wean them, which was when they were from six to seven months old. I found that during the summer the amount of pasturage needed for little bullocks of that kind was very small. I fed them right along and for a number of years succeeded in producing one or two carloads of

little bullocks every season. The average age of the little bullocks was twelve to fourteen months, and they averaged right along a thousand pounds. No one can lose money in handling cattle that way. I think if every breeder here would make a practice of showing what a few high-grade short-horn calves will do in making baby beef, having them ready for market at twelve or fourteen months old, he will find he can not lose. When I was in the business of raising cattle I did not sell when the little bullocks were twelve or fourteen if the market did not suit me. They would go on gaining until they were twenty or twenty-two months old, but really the most profitable age to market is when they are twelve or fourteen months old. I think it would be a good plan, in order to extend the use of short-horn sires, for every man to give his neighbor farmer an object lesson. They all want to make money. When you can show them that they can take a short-horn sire on an ordinary grade cow of the country and in twelve or fourteen months have a thousand pounds of beef which they can sell at the top of the market anywhere, you are leading people into a knowledge of the use of good blood. The gain per day in short-horn cattle is always higher than in any other breed. The cow that produces the kind of a calf I have spoken of, and the one that gives the milk and butter necessary for the use of the family, is the best.

Mr. Douglas: I have always thought the short-horn was the farmer's cow. She always has been for us. My first recollection of short-horn cattle is a Kentucky sire my father kept. The cows raised good short-horn calves, but we weaned them a little younger than Mr. Lockridge says he weaned his calves for baby beef. We milked the cows afterwards and made butter. I sometimes think the dual purpose cattle are better than the ones we raise exclusively for beef. They were very profitable to us when we raised them, because we sold the calves and milked the cows. No other cow can compete with the short-horn. She is in a class by herself.

THE EFFECT OF INDIANA STATE CLASS ON THE EXHIBIT AT THE STATE FAIR.

MR. T. J. CHRISTIAN.

Mr. Chairman and Members of the Indiana Short-horn Breeders' Association: It was a great surprise to me, upon arriving home Christmas, to find a letter from our worthy secretary, informing me that I was on the programme of this meeting, topic to be, "The Effect of the Indiana State Class on the Exhibit at the State Fair." Now, John went on to say:

"We insist that you respond, as we think your subject a vital one to the Indiana breeders and exhibitors at present." As he came after me so strong, I suppose I will have to say something on the subject, although I would have preferred to have some one more able prepare the paper.

The Indiana state class is an important and beneficial one to the breeders and exhibitors of this state, and I want to congratulate this association on the grand exhibit in this class made at our last State Fair. It was gratifying to see the large numbers and good quality of the young things brought out, and shows that this class was wisely established and is appreciated, and has been the means of encouraging small breeders to exhibit their good ones, and is filling its intended mission.

I wish, also, to congratulate the breeders for the imposing display of short-horns in all classes. It was a wonderful show, and I think I can safely say the best show of short-horns ever held at our State Fair. This was all the more remarkable as the great live stock exhibition of the Louisiana Purchase Exposition, at St. Louis, was on at the same time. This, however, did not seem to detract from the exhibition held here as to numbers or quality. It has been a "banner" year for the Red, White and Roan, and especially for those from the great state of Indiana. Our herds have been found on exhibition at all the state fairs and national shows in the United States, and one herd invaded Canada and was on exhibition at the great show in Toronto. At all these shows in competition with the best lot of cattle ever exhibited, Indiana cattle were always in it when the ribbons were distributed. Indiana sent out the senior and junior female champions of the breed, neither of which have ever been defeated in their class. Indiana exhibitors have reason to feel proud of the record they have made in the show-yard during the past season.

How, and why, were these grand herds of show cattle founded? There is always a beginning. Very few men are able to start out at a bound with a full herd of cattle able to land within the money. It takes experience, it is expensive, and is attended by many trials and lots of hard work; but you find the number of exhibitors increasing year by year. Why? Because it is like everything else. There is a beginning in a small way. A breeder will have one, or a half dozen, young things that he considers to be extra good. He probably has been taking in some of our fairs, or national shows; and, after looking over the exhibits, he concludes that he has some better than the ones he saw there. He begins fitting them, with an idea of showing them; he puts them on exhibition at his county fair, and if successful in securing a ribbon he looks for larger fields to conquer. He gathers a certain amount of enthusiasm, and is proud of his success; "but," he says, "I can not go up against those professional showmen, who have their herds out on the circuit." He feels a little backward about making his first show in strong competition; but when he finds a state class he will probably enter his cattle and take

them to the State Fair, thinking that he would at least stand some show in this class. He will probably find company here, and will think after being in the ring a short time that it is the biggest lot of calves he ever saw at a show, both as to size and numbers; but his experience in that show ring will be well worth the trouble, as he will figure out where his calf is better than the one ahead of him, and will wonder why the judge can not see it. At the same time he will keep his eye on several below him that look good, and will be afraid that the judge will see them; and right here is where the good comes in—it educates. A breeder by comparison sees where his cattle are weak, and strong, and he is enabled to get an ideal to work to. He will see where he might have done better in the feeding and care of his cattle; he will endeavor to find out the whys and wherefores, because he is interested in that show, and not merely a spectator, who, after the rings are shown, is off to see other sights. The show ring is of much profit to the exhibitor and breeder. It is a great educator, and I might also add a great advertisement.

The state class benefits all in a number of ways. It encourages the breeding and showing of good cattle; encourages the small breeder to bring out his few, knowing that in this class every man must breed his entry, and he is encouraged to breed good cattle, exhibit them, and receive his reward. He will increase his exhibit year by year, and will soon be found on the circuit fighting it out with the best of them. It helps build up the higher standard, every breeder trying and studying by what crosses to produce the perfect animal. It creates enthusiasm, and a demand for more good cattle, and the large and small breeder are benefited alike. In fact, the show yard has become the great educator. The time has come when people in buying cattle look at the individual first, and then the pedigree. They want good cattle, and are willing to pay for them. I do not mean by this to say that good pedigrees are not essential, but the good individual is more essential.

At all the sales held during the past year good fair averages were made on good cattle, while the poor individuals were sold at very low prices, and in a number of cases I know the parties would have made money and done the short-horn fraternity great good if they had sent the whole lot to the block, instead of offering them to the public. The state class is one of the best mediums of education, and I hope that this association will see fit to continue this class, and if possible extend its scope and benefits by offering more money and additional classes. I should like very much to see a class for calf herds, all to be bred by one exhibitor.

I was sorry to see so few steers shown in this class. This is an important feature and should be encouraged. Our breeders should exhibit more steers. It has been the policy of most short-horn breeders to make steers out of their cull bulls, but, while this part of it is all right, I think we should make steers out of some of our good bulls, then fit and exhibit them. We can not demonstrate to the world that we have the greatest

beef cattle on earth with a lot of culls. Our Angus, Hereford and Galloway competitors are making steers of some of their best calves and are fitting and showing them, much to our detriment. However, I am glad to note that the short-horn breeders are beginning to realize the importance of this matter, as at the last international show there was a very creditable display of pure-bred steers, but there is ample room for improvement, and I hope next year to see a much larger exhibit and a short-horn champion steer, and from Indiana, at that.

I am in hopes that the Indiana breeders will make a stronger show of steers in our state class. It is of great importance, and I hope that you will see the wisdom of it and will fit one or two steers; but fit good ones. It will be of great benefit to you, and to the breed, and if possible would like for this association to offer more money for steers and encourage this feature of the show as much as possible.

In conclusion, will say that the Indiana state class has been a great benefit to the breeders and exhibitors of this state, and can be made a strong feature and a great advertisement for Indiana breeders, and I hope this association will see to it that this class is continued, and if possible enlarge its scope, and I am sure that the result will prove the wisdom thereof.

Mr. David Wallace, Indianapolis: I can tell you what I think about this state class. It is simply great! That expresses it. In having these classes you encourage the young breeders and the boys. I believe these state classes are doing more good, not only in the encouragement of the young breeder, but in the encouragement of the breeder who can not go out and compete with the regular show men. If we have these state classes such breeders pick out the best they have, and, while they are often disappointed in the result, they learn a great deal about the animals. They will probably learn that their animals were not properly fed and fitted, and they go home resolved to do better next time and usually they succeed. In many cases they become show men and exhibit herds of cattle. I believe in state classes. Our state fair and county fair managers ought to encourage them.

I also believe in the steer classes. I think there is as wide a field there as in fitting a show herd. You can show what a short-horn is as well with a steer as you can with a bull or a cow. One of the first propositions I had to deal with after becoming a member of the State Board of Agriculture was the State Fair, which was then being discussed, and I used my influence in favor of the state classes. I believe we ought to make the state classes as interesting as possible. We can do it by giving more money and encouraging the young breeders and the older breeders who may not have herds to show, but who can show others what they are doing.

Senator Harris: Apropos of what Mr. Christian has said, I wish to speak of something that has been a sort of grievance of mine for many

years. What is the best form of prize to award? Take the case of the young breeder. Ought the premium always to be paid in money, or should there be something that will be more permanent than a money prize? My mother was the best farmer I ever knew, except my grandmother. My mother began showing cattle at an early day, and each of her children has today a silver cup which she received as an award. Nearly all of them have a soup ladle or two obtained in the same way that have been handed down. I have distributed among my children some gold and silver medals which are constantly exhibited. In England I have seen upon sideboards displays of silver that have been won in the prize ring by two or three generations of exhibitors. At Dean Willis's I saw a number of trophies. At other places I saw a number that were of historic interest that had been handed down from father to son. I think Colonel Wallace and others should consider that question somewhat. It seems to me in our awarding of prizes we have put everything on the basis of filthy lucre. Can not we devote some of the money, especially in the special classes, to a number of permanent souvenirs that will be a constant incentive to those who come after us?

Mr. Wallace: That is a splendid idea! In discussing the state classes in the board the most serious proposition we ran up against was the expense to the exhibitor. They said the exhibitors did not have the money. They said it was all right for such men as Mr. Robbins to come, because he had a show herd and entered in all classes. It would be but a small additional expense for the state board to offer such prizes, and I promise I will advocate the furnishing of a cup or medal, or whatever the state breeders may suggest. I am still in favor, however, of hanging up a liberal purse to help them share the expense. There is a great deal of sentiment in this idea, of course, and I don't know how much sentiment there is in the Indiana breeders of short-horn cattle.

Senator Harris: I do not mean that the money prizes shall be cut out altogether.

Mr. Wallace: I believe I will advocate the purchase by the board of a handsome cup or medal to be offered as a sweepstakes prize, or something of that character. I will join with this association in advocating that before our board. Then the state association or some individual might offer another cup or medal.

Mr. George W. Thomas: I think there should be a prize offered for the younger breeders or the boys to compete for. I have always had in mind that something that would increase in valuation was better than money prizes. For that reason I think the offer of a pig or a calf would be a good idea. Some breeder of hogs might contribute a pig to be competed for by boys of sixteen. That would encourage the boy and allow

him to demonstrate what he could do in the way of breeding hogs. I think a pig or a lamb would be a better prize than a cup or a medal. The boy could keep flocks or droves from the increase of the animal won as a prize as long as he remained in the business.

Mr. Walter Quick: It seems to me we had better all have something to offer on this subject, or we will not have any prizes to offer at the next fair. I think we should keep on offering prizes. That they have been of great benefit to the breeders no one can question. It would seem as if in these times when cattle prices are a little lower than they have been we want to give all the encouragement possible. For that reason I think we should make up a little larger purse than heretofore.

Mr. Wallace: I should like to ask Senator Harris a question. If you were to offer a cup or a medal, what would you award it for?

Senator Harris: If you have plenty of prizes offered all through your classes, I think a sterling silver cup might be offered as a sweepstakes prize for the championship prize. Even a boy would appreciate that. Its value is permanent and it will be kept in the family. It will go on and not be obliterated the first time he wants to blow in ten or fifteen dollars on his best girl. The giving of such articles as prizes seems to be an almost universal custom on the other side, and we can well afford to study a great many of their methods. They bestow more individual attention on their calves, and we can follow some of their methods with profit.

Mrs. Meredith: There is a very substantial value in a silver cup. At our home we never drink water out of anything but silver cups, and they nearly all have inscriptions on them. We have fifty-dollar silver pitchers that were awarded to General Meredith, and we prize these things very highly. The silver cups we use every day on our table are not worth more than five dollars apiece, but we value them very highly on account of their associations. I do not favor doing away with money prizes, but I think an additional silver prize is very suitable.

Mr. Wallace: I believe in helping a good thing along. I will offer a prize of the sort we have been speaking of that will cost from twenty-five to fifty dollars. This is my state. Everything I have in the world I owe to it, and I am going to do what I can to encourage the breeding of good short-horns. The rest of you will have to decide just where you want that prize hung up.

Senator Harris: I would confine it to animals bred by the exhibitor in all cases.

Mr. Wallace: And bred in the state?

Senator Harris: Yes; that should be a state trophy.

Mr. Gartin: I think if Mr. Wallace gives the cup we should call it the Wallace Cup. I think the breeders of this state are much indebted to Colonel Wallace for maintaining this state class. I should like to see the cup bear his name.

(It was taken by consent that the cup offered by Colonel Wallace should be called "The Wallace Cup.")

President Bowen: I suppose this will be an annual event?

Mr. Wallace: If it is a success I may hang up three cups next year. I will leave it to the association to say to what class the cup will be given.

Mr. Douglas: I think Mr. Christian's suggestion of a calf herd is a very good one.

President Bowen: The question was asked by Mr. Douglas this afternoon whether or not he would be allowed to show in these classes next year. I have forgotten what the rule has been in the past as to exhibiting in these classes, but my impression now is that animals bred in the state or calves the property of the exhibitor are entitled to show in these classes. Am I correct?

President Bowen: When Mr. Douglas asked some of us this question I said, in order to avoid any confusion at the State Fair next fall, I would put the question to the association this evening. Mr. Douglas, as you know, formerly resided in this state, but moved to Michigan, married a wife, and now has moved back to the best state in the Union. He did not know whether he would be allowed to exhibit animals bred in Michigan. To get a clear understanding of the matter I have presented the case to the association.

Mr. Gartin: It has been no small affair heretofore to raise the fund to pay for these premiums, and breeders such as Mr. Douglas have been the largest contributors to the fund. Mr. Douglas called my attention to this matter some three or four weeks ago, and I told him I could see no reason why he should not be allowed to make an exhibit.

Mr. Robbins: We have not yet decided whether we shall have a state class next year. I move you that we have a state class next year under the same regulations in regard to ownership, breeders, etc., as we had last year. (Seconded.)

President Bowen: I should like to know just what the regulations are.

Mr. Gartin: We made the classification first. The classification consisted of a junior and senior yearling and a junior and senior calf, both

male and female. After we made the classification it was ordered that the bulls and heifers of these classes be the property of the exhibitors. It was then moved and seconded that the steer classes be confined to Indiana breeders, bred and owned by Indiana exhibitors.

President Bowen: Then the proposition is that this association make the same offer of premiums for such classes as the executive committee may designate, the bulls and heifers to be dropped the property of the exhibitor, and the steer classes to be confined to Indiana breeders.

Mr. Robbins: The steers must be bred in Indiana and be owned by the exhibitor from Indiana.

The motion was voted on and carried.

Mr. Quick, of the Auditing Committee, read the following report:

We, the Auditing Committee of the Indiana Short-horn Association, for 1905, have examined the books of the Secretary and Treasurer, and find them correct.

WALTER J. QUICK,
GEORGE W. THOMAS,
J. E. ROBBINS.

On motion the report of the committee was adopted as read.

Mr. T. J. Christian, for the Committee on Nominations, reported as follows:

For President, W. F. Christian, Indianapolis.

For Vice-President, Morris Douglas, Hope.

For Secretary, John G. Gartin, Burney.

For Treasurer, John W. Harper, Lafontaine.

For Director Improved Live Stock Association for one year, W. S. Robbins.

Mr. Quick: I move that the retiring president cast the ballot of the association for the members named by the committee for the officers of the association for the ensuing year.

The motion was seconded and carried by a unanimous vote, and President Bowen cast the vote of the association as directed.

Mr. Gartin: I suppose the responsibility of raising the money for the state class rests upon the secretary. Last year part of it was raised at the meeting and part of it through correspondence with the members. Every member of the association was asked to contribute. I think it would be a good plan to see how much money can be raised here tonight. I like this plan better than to sit down and write two or three letters to a member asking him to contribute. We might try to raise part of the fund here tonight, and then I shall correspond with the members not present.

I want to call the attention of the association to the annual report. Last year and the year before we published the annual reports separate from the reports of the State Board. Besides mailing copies to all the members I mailed copies to every state in the Union. I sent about one hundred to Professor Skinner for the Purdue students. I should like to know at this time whether or not I shall have the proceedings of this meeting published.

Professor Skinner: I want to thank the association for the reports. They were received and distributed, and I am sure the young men of the institution appreciated them. Some of the associations get these reports cheaper by getting an excerpt from the reports of the State Board. The state printer gets out the regular State Board reports, embodying reports of all the associations, but if there is an arrangement made with the printer he will set up the report of the Short-horn Association and do it much cheaper than any other printer will.

President Bowen: I move that the association have the report of this meeting published separate from the State Board of Agriculture reports.

The motion was seconded and carried.

The convention was then adjourned sine die.

LIST OF MEMBERS.

Aikin & Sons, Carlisle.	Chapman Bros., Winamac.
Amick, John E., Scipio.	Douglass & Sons, Hope.
Anthony, Geo., Cicero.	Dye, John T., Indianapolis.
Adams, T. E., Columbia City.	Eastman, Dr. T. B., Indianapolis.
Baird Bros., Wallen.	Elder, James E., Marshall.
Baum, G. W. & Son, Delphi.	Grindle, John H., Akron.
Brockman, W. F., Hartsville.	Gartin, John G. & Son, Burney.
Buchanan, James, Metea.	Green Bros., Farmland.
Biliter, Ben F., Huntington.	Heilman, Ralph L., Hope.
Bowen, E. W., Delphi.	Hill, Prof., Carthage.
Busby, T. V., Anderson.	Hadley, Oscar, Plainfield.
Blades, John W., Roachdale.	Haines, James, Rockport.
Cotton, Frank W., Manilla.	Harper, J. W., Lafontaine.
Cunningham & Welsh, Martinsville.	Harlow, J. R., Kempton.
Christian & Sons, Indianapolis.	Heagy, D. W., Columbus.
Creek & Sons, Liberty.	Hollingsworth, W. P., Shadeland.
Campbell, Newton, Kempton.	Hadley, William, Bloomingdale.
Chambers, John T., Pendleton.	Holder, Mart, Hope.
Clapp, Samuel E., Hartsville.	Hobbs, D. C., Atlanta.

- Indiana Farmer, Indianapolis.
Keim, Howard H., Ladoga.
Kersey, A. J., Lebanon.
Kirk, George & Son, Linwood.
Kerlin, W. F., Rockfield.
Kitchen, Frank B., Greensburg.
Levering, Mortimer, Indianapolis.
Lockridge, S. F., Greencastle.
Morris, Marion, Winchester.
Madden, Miles M., Kingman.
McLane, C. E., Danville.
Mattern, W. H., Bridgeport.
Meredith, Mrs. V. C., Cambridge
City.
Miller, W. T. & Sons, Winchester.
Moorman, Luther, Winchester.
Nelson, Chas., Bloomingdale.
Newson, Albert, Columbus.
Norvell, C. W., St. Paul.
Olliphant, G. M., Spencer.
Peden & Son, Spencer.
Peters, John C., Ft. Wayne.
Porter, Robert M., Connersville.
Palmer, J. W. & Son, Albion.
Quick, S. R. & Sons, Indianapolis.
Robbins, J. G. & Sons, Horace.
Rose, W. W., Rossville.
Robbins, Earl, Grammer.
Ringer, George S., Rockfield.
Smith, John & Ed, Irvington.
Sanders, J. D., West Newton.
Smith, Artemus, Deacon.
Sowers, E. E., Warren.
Stout, J. O., Bellmore.
Smith, E. F., Ashley.
Strange, Joshua, Arcana.
Silverthorn, J. E., Rossville.
Taggart Bros., Charlestown.
Thomas, G. W., Rushville.
Turner, W. E., Lebanon.
Tyre, J. E., Lebanon.
Vinnedge, Tom, Hope.
Wallace, Col. David, Indianapolis.
Wall, Isaiah, Vanburn.
Williams, J. D., Vincennes.
Williams, J. W. & Sons, Bryant.
Witter, Jos., College Corner, Ohio.
Wood, W. J., Lebanon.
Wright, J. V., Grammer.

ORGANIZATION

OF THE

Indiana Potato Growers' Association.

For some years prior to the organization of this Association there had been a feeling among the more prominent potato growers of our State that a closer relation should exist between those farmers who are making potato-growing a specialty as well as those who are growing in a smaller way.

There has also been a growing interest in the industry from the fact that Indiana imports annually into the State, mostly from northern growers, hundreds of carloads of Irish potatoes. There is also large shipments made into the State from the South and West, supplying the early markets. These facts have led many farmers to believe that while Indiana is not considered to be well adapted to the production of this product, much improvement can be made by proper soil selection and a better understanding as to the various elements that enter into an intelligent method of production.

It is claimed for the Indiana product that we grow a better flavored, higher quality Irish potato than is sent to our markets from the great potato-growing regions of other States.

In accordance with these views a conference was held at Lafayette, Indiana, the week of Corn School and Stockmen's Convention, at which time it was decided that Mr. Amos Garrettson, of Pendleton, Indiana, should issue a call for organization at some time during the week of the State Fair. In considering the matter, however, it was decided to call the meeting at an earlier date, which was fixed on February 28, 1905, at Room 11, State House, Indianapolis, Indiana.

In response to this call the following persons met on the above date. J. M. Gillispie, Jonesboro, Indiana; Will A. Bowman, Daleville, Indiana; W. S. Young, Franklin, Indiana; J. J. Millhouse, Valley Mills, Indiana; David F. Copeland, Bridgeport, Indiana; J. D. Nysewander, Ben Davis, Indiana; Amos Garrettson, Pendleton, Indiana; D. F. Maish, Frankfort, Indiana, and upon motion of Mr. Young, proceeded to a temporary organization, in

which Mr. Garrettson was chosen chairman and D. F. Maish, Secretary. The chairman stated the object of the meeting and invited all present to take part in the proceedings.

Some time being spent in informal remarks upon the subject in hand, it was moved that a permanent organization be effected. All present responded with the opinion that the time was ripe for such an organization and the motion was adopted without a dissenting vote. Upon motion the following committee was appointed on constitution and by-laws: J. D. Nysewander, D. F. Maish and David F. Copeland, who reported the following, which was unanimously adopted.

CONSTITUTION.

Article 1. This organization shall be known as the Indiana Potato Growers' Association.

Article 2. The object of this Association shall be to disseminate information and increase our knowledge in the production of Irish potatoes in the State of Indiana, and to improve the quality and increase the yield of the same.

Article 3. Its members shall consist of all persons interested in agricultural pursuits, who shall pay into the treasury of the organization, on or before the date of the yearly meeting, an annual fee of one dollar (\$1.00).

Article 4. The officers of this Association shall consist of a President, Vice-President, Secretary and Treasurer, who, together with three members elected by the Association, shall constitute an executive committee for the transaction of business.

BY-LAWS.

Article 1. The President shall preside at all meetings of the Association, and shall have power to call meetings of the Executive Committee. He shall present to the Association in his annual address such suggestions and recommendations as he may deem appropriate.

Article 2. The Vice-President shall preside in the absence of the President and assist in the duties of the same.

Article 3. The Secretary shall keep accounts of all transactions of the Association, receive all moneys due and pay the same to the Treasurer, taking his receipt for the same. He shall receive and answer all communications addressed to the Association, and at the close of his term or office, turn over to his successor all books, papers, moneys, etc., belonging to the Association.

Article 4. The Treasurer shall receive from the Secretary and secure all funds of the Association, paying out the same on order of the Secretary, countersigned by the President.

Article 5. The officers of this Association shall be elected by ballot at the annual meeting of the Association, and shall continue in office for one year, or until their successors are duly installed in office.

Article 6. The method of electing members of the Executive Committee, other than the regular officers, shall be as follows: One for one year, one for two years, one for three years, one member to be elected annually hereafter for a period of three years. It shall be their duty to act in conjunction with the President and Vice-President, Secretary and Treasurer in preparing programs for all meetings and to look carefully to the interest of the Association.

Article 7. These by-laws may be altered or amended at any regular meeting by a majority vote.

Article 8. The Association shall hold its annual meeting the first week of January of each year, at such place as the Association shall designate at its annual meeting.

The following persons having paid the annual fee of \$1.00 are hereby registered as charter members: Will A. Bowman, Daleville; Chester A. Garrettson, Pendleton; Amos Garrettson, Pendleton; J. J. Millhouse, Valley Mills; David F. Copeland, Bridgeport; J. D. Nysewander, Ben Davis; W. S. Young, Franklin; J. M. Gillispie, Jonesboro; D. F. Maish, Frankfort; M. O. Wright, Pennville; Arthur Lewellen, Shidellers, Indiana.

Upon motion the following officers were chosen for the ensuing year: Amos Garrettson, Pendleton, President; Will A. Bowman, Daleville, Vice-President; David F. Copeland, Bridgeport, Indiana, Treasurer; J. D. Nysewander, W. S. Young and J. M. Gillispie, members of Executive Committee.

NINTH ANNUAL REPORT

OF THE

Farmers' Mutual Insurance Companies' Union of Indiana,

Held at Indianapolis, January 5 and 6, 1905.

OFFICERS.

Aaron Jones, President.....	South Bend
George V. Kell, Vice-President.....	Huntertown
H. L. Nowlin, Secretary.....	Lawrenceburg
J. L. Thomas, Treasurer.....	Pendleton

PAID-UP MEMBERSHIP FEBRUARY 1, 1905.

Patrons' Mutual Fire Insurance Company of Dearborn County.
Allen County Mutual.
Fulton, White and Pulaski Counties Mutual.
Greene County Mutual.
Lawrence Township, Marion County, Mutual.
Farmers' Insurance Company of Kokomo.
Benton, Jasper and White Counties Mutual.
Whitley County Mutual.
Jefferson County Mutual.
Monroe, Jackson and Lawrence Counties Mutual.
Clark County Mutual.
German Baptist of Wayne, Union and Fayette Counties.
Grant County Farmers' Mutual.
St. Joseph County Mutual.
Farmers' Mutual Insurance Association of Hamilton County.
Madison County Farmers' Mutual.
Bartholomew County Farmers' Mutual.
Farmers' Mutual Insurance Company of Mulberry.

P. of H. Insurance Company of Decatur County.
Hancock County Mutual Fire Insurance Association.
Hendricks County Mutual.
Shelby and Johnson Counties Mutual.
Delaware County Insurance Company.
Jennings County Farmers' Fire Association.
Farmers' Mutual Aid Association of Warrick, Vanderburg and Gibson Counties.
Patrons' Mutual Aid Society of Toronto, Ind.
Farmers' Mutual Fire Insurance Company of Newton County.
Farmers' Mutual Fire Insurance Company of Dekalb County.
Farmers' Mutual Insurance Company of Montgomery and Fountain Counties.
Henry County Farmers' Mutual Insurance Company.
German Baptist Fire Insurance Company of Delaware, Randolph and Henry Counties.
Mutual Windstorm and Cyclone Insurance Company of Vanderburg, Posey, Gibson and Warrick Counties.
Farmers' Mutual Indemnifying Company of Pike Township, Marion County.

PROCEEDINGS.

The first session of the meeting was called to order at 10 o'clock a. m., Thursday, January 5, Secretary H. L. Nowlin in the chair.

In the absence of President Aaron Jones, D. F. Clark of Mulberry was selected as temporary chairman.

The chairman appointed the following Committee on Credentials: H. L. Nowlin, R. A. Kirkman, J. H. Biddle.

On motion of Secretary Nowlin a recess was taken to allow members to register.

Mr. Kirkman, for the Committee on Credentials, submitted the following report:

We, the Committee on Credentials, wish to report that the following are entitled to act as delegates in this meeting:

Enoch Drumm, B. L. Barrett, J. E. Dye, L. W. Dunfee, L. T. Hale, C. G. Hunter, R. A. Kirkman, J. G. Haas, W. A. Kelsey, L. E. Collier, J. L. Smith, J. O. Mendenhall, H. H. Kendall, H. D. Tufts, W. R. Clore, T. M. Jeffras, D. F. Clark, George M. Clark, J. M. Bell, F. M. Gable, Calvin Deil, F. H. Yundt, C. E. Clawson, G. M. Blackstock, J. H. Biddle, Aaron Jones,

G. W. Searce, F. P. Johnson, P. B. Ewan, J. N. Gullifer, D. O. Dilling, T. A. Shafer, J. D. Hoover, Peter Fiant, L. J. Hooke, Emmet Moore, W. P. Noffsinger, W. C. Bray, C. D. Zimmer, A. H. Myers, George M. Young, William Watlington, Charles Breck and R. A. Phillips.

Respectfully,

R. A. KIRKMAN,

J. H. BIDDLE,

H. L. NOWLIN,

Committee.

Mr. Saunders: Is there anything limiting the number of delegates a company may send here?

Secretary Nowlin: A company is entitled to one delegate for each million dollars of insurance carried.

On motion the report of the Committee on Credentials was accepted.

President Jones in the chair.

President Jones: I notice by the program that I am to deliver an address. As my train was late I made the address on the train, which was perhaps better than delivering it here. I desire to make a few, and only a few, remarks on the question we have met to consider. As the years come and go I find the question of mutual insurance is becoming of greater and greater importance. I find also that by careful supervision of the companies, not only in this, but in other States, the number of fires has been reduced. One of the great arguments in favor of mutual insurance is that the close supervision the members have of their own business will reduce the number of fires and consequently reduce the cost of insurance. It does not only limit the extraordinary expense of stock companies, but it also saves the country vast sums of money.

I have taken pains during each and every year to ascertain the results of the mutual insurance companies everywhere. Last year I traveled over twenty-eight States of the Union, and everywhere observed the working of these companies. There is not a single State in the Union where mutual insurance obtains a foothold that is not more and more in favor of it as times goes on. All of these States, like Indiana, have had a spasmodic fight, for the business, with the stock companies. But wherever the mutual companies have stood up and made a manful fight for their rights they have prevailed and are absolutely getting the business. So successful has been mutual insurance that men in towns and cities are trying to get enabling acts in the different States, so that they may get out from under the unjust system they are now suffering from. The stock companies have become, not only burdens, but their insurance is unsatisfactory. You may insure in any company you please, with the

exception of a few outside companies not in the insurance union of stock companies, and you will have to abide by the rate fixed by a single individual appointed by them.

Your company may have a standard of expenses, so far as your losses are concerned, but it is largely dependent upon the judgment used by the directors and the agents in the selection of risks and the placing of policies. This is an important feature, and I am sure that every company in our country can make such records for themselves that the reports presented to our Mutual Union will inspire others to make a careful analysis of their business and give it a closer scrutiny and examination with a view to reducing the cost of insurance in their localities. The cost of insurance can thus be reduced all over the country.

In Massachusetts the stock companies fixed a rate of \$1.75 upon farm risks. No farmer could be insured for a less rate than that. We know that is a very exorbitant rate. Not only that, but they fixed the amount that an insurance company could take on farm property. No company could take to exceed fifteen hundred dollars on such farm property. There are many fine farm homes and farm buildings in Massachusetts, houses and buildings that cost from seven to ten thousand dollars, yet no company could take to exceed fifteen hundred dollars on such a building. The farmers were forced to go to the Legislature to get an enabling act for the establishment of mutual companies. That was three years ago. Since they have had the mutual companies they have reduced the insurance to the farmer to 25 cents on a hundred dollars.

All classes of people are now trying to get into the mutual companies in Massachusetts, and the same thing is true in nearly all the New England States. Wherever I have traveled in the United States I have found that mutual insurance has driven out the stock companies so far as farm risks are concerned. In the State of New Hampshire they have had mutual companies for a great many years, and their risks are becoming better, their losses fewer and the cost of insurance less on account of the experienced men in the management.

I would like to say that, in my judgment, a mutual insurance company in the selection of its officers and managers ought to select men with qualifications and fitness, not try to pass the honors around among the members. That is a most detrimental policy, because we need in these positions men of experience, men of training and men of judgment. You would not pursue such a policy in any other business in the world. If you had a superintendent managing a business for you and he had done it with success you would not think of changing because you wanted a rotation in office. The effort of every member should be to reduce the cost of insurance and save expenses. Good management, when once secured, I think ought to be retained. Their experience will sharpen their ideas and will give them opportunity for securing business and saving money.

I shall not discuss the question any further now, but when the various papers are read I shall probably discuss them to some extent.

Under the subject of "A Model Insurance Company," H. D. Tufts spoke on "The Application," as follows:

Mr. Chairman and Gentlemen—To get an application that will be equitable and just, both to the company and to the insured, has been a matter of study with me. When a person pays his money he wants to feel he is insured to the amount he pays for. With my experience in the old line companies I found that as long as we paid our premiums and did not have any losses all went smoothly and well. But when we met with losses we found it was very difficult to get them adjusted equitably.

I think the application of our own company is equitable and just, and shall take that as an illustration. If the application is for insurance on a dwelling house, that fact is stated, and is followed by a description of the house. The size and height of the building are given. The next questions would be in regard to the age of the building, the material used in its construction and the kind of shingles used on the roof. There are some other questions that are sometimes asked. At the end I put the amount we will take on the risk. After covering the building I take the personal property, itemizing it carefully. I include in the items of personal property the produce on the farm. I think that is essential in any application. While it might not be in the building mentioned in the application, it is on the farm and should be included. We want it insured if it is on the farm. Then comes the farming implements, and then a blank is left for other things that may not be specified in the printed form. The live stock is itemized separately.

It is specified in the application that not more than two-thirds the cash value of the buildings shall be insured. There is a place allowed to describe the condition of the buildings, whether they are in good or bad repair, the height of the chimneys and whether they are built from the ground up. Then the title is described, and it is shown whether there is a mortgage on the building or not. We consider that an essential thing to be included in the application. Then the applicant must certify that the answers to the above questions are correct. This is signed by the applicant.

The constitution and by-laws of the company should be made a part of each application, and the application should be signed by the applicant himself. If we adopt this rule we have a fair understanding between the applicant and the company. I would have nothing in the shape of an agreement in the policy that is not in the application. The old line companies have such agreements in the policies.

I do not claim that this application is perfect, but I do claim it is more perfect than anything we have been able to get since we have been doing business as a mutual company.

Mr. Kelsey: I understood you to say you made a record of the amount of insurance you wrote on each building, but you did not state that you made a record of the value of the building.

Mr. Tufts: We always put down the cash valuation of the building, then the sum we will insure it for. We never take over two-thirds the cash valuation.

Mr. Young: I understood you to say the produce is put in the application. Do you make that broad enough to include hay, corn and everything grown on the farm without specifying the different articles?

Mr. Tufts: I consider when I go into an insurance company and pay my money I want my property insured against fire to a certain amount. If I itemize my property in the application I will probably omit some things from the list, and if there is a fire and these particular things are burned I will get nothing for them. If I say "produce" in the letter, and do not specify the particular items, I can get the value of what is lost in case of a fire.

The meeting was adjourned until 2 o'clock p. m.

SECOND SESSION.

The second session was called to order at 2 p. m., Thursday, January 5, Mr. Jones in the chair.

Mr. Young: Suppose a man insured some specific horse for one thousand dollars, and then trades or sells that horse he must have his insurance changed. I never could understand why, if I have a thousand dollars' worth of property in a barn and am willing to pay on a thousand dollars' worth, that insurance should not cover all of it. If I am unfortunate enough to have a fire you should all assist me to get on my feet again. I have always maintained that if we put a thousand dollars of insurance on one horse there is less likelihood of that horse being destroyed by fire or lightning than if we had the same insurance on five or ten horses. Our company does limit the amount to be placed on one animal, and I have always maintained that it is wrong. We up there as neighbors are organized for mutual benefit, and whether I have a thousand dollars in one horse or whether I have it in five horses makes no difference to the company. If I have that much insurance on property and a thousand dollars' worth of that property is destroyed, I have a right to get that amount from the company.

I should like to know how insurance on the contents of a barn can be limited. The question resolves itself into the evidence you can gather after the fire. The same thing applies to hay or grain or implements, or

to any other kind of personal property, as well as to a horse. If you can ascertain accurately what the insured had in that barn you certainly can ascertain the value of the horse. The people who have the best class of property usually make the best members, and they are the people we want in our company. Because a man happens to have stock that he could not possibly take a hundred dollars a head for is no reason why he should be compelled to take a policy in another company to fully protect them. That would be a hardship on him.

President Jones: Why not eliminate all specific insurance and say "personal property."

Mr. Young: We do. We take the house or barn or other structure at two-thirds of its actual value. We used to carry eight hundred dollars on the contents of a certain barn. Along in June there would probably be twelve hundred dollars' worth of stuff in it, while at other times, when the hay was fed out and the corn was gone, and the animals were in the pasture, the probability is that if the barn burned the owner could not in justice ask or recover more than two hundred and fifty dollars.

President Jones: The result would be that every time there was a loss the amount of insurance would have to be paid. That would make the rate of assessment higher, and when comparison was made with stock and other companies you would be at a disadvantage. If you itemize your accounts you make a lower rate, it shows to the world a lower rate of assessment, and thereby gives your company a talking advantage you never can get under your plan.

Mr. Young: This talking advantage is secured at the cost of the policy holder.

Mr. Bray: I am well aware, and have been for years, that our insurance costs more than it would under that system of insurance. At the same time we cut any rate any old line company can give right in two. For over twenty years our assessments have not been over twenty-five cents. We lack about fifty-five thousand dollars of having four million dollars of insurance in the county today. While our cost of insurance is not as low as some others, it is as low in comparison with other insurance. We give a man more for his money than anyone else.

Mr. Tufts: In an application I start out with the view of doing no injustice to the mutual company, but doing justice to the patrons of the company. Hence I take the position that in insuring personal property we should cover it as much as we possibly can, and not itemize anything if we can possibly help it. We have, however, some patrons who want everything itemized, and we allow them to do so in the application.

President Jones: We are honored on this occasion with the distinguished presence of the president of the National Union, Hon. W. D. Forbes.

Mr. Forbes: Gentlemen, I am very glad to meet you. I wish to say at the outset that I came here to meet you and not to make a speech. It is always a pleasure to me to meet with a body of mutual insurance men. I have been identified with mutual insurance for 35 years, and I have met with you before in your State conventions in this room. I have met many Indiana people in national conventions.

Although I have been interested in mutual insurance for so many years I am learning something new about it every day. This subject is a great deal like the Good Book—every time we take it up we find something new in it. We may meet in these conventions and discuss plans and methods, and we always find some new ideas cropping out that somebody is going to get some benefit out of. That is the object of State meetings. There are few of you who represent companies that do not think you have the best companies in the State. Sometimes I am asked: "What is the use of meeting in these conventions? We have a good company, we are doing well, so what is the use of going to the expense of attending meetings?" The same argument is used in regard to the national convention. We are doing just the same good to the various States in regard to mutual insurance that you are doing to the various companies of your State by these conventions. We are growing over the entire United States. The principal of mutual insurance is going on; we are branching out into all classes of insurance. There was a time when we thought, being farmers, we could only handle or control local companies. It was thought we did not have the brains or the ability to master a State company and handle it successfully. That theory has long ago been exploded, and we now have many State companies writing all classes of insurance. I think your laws are somewhat lacking in this respect. I was told today that you are not allowed to write town dwellings in this State.

We have in the State of Iowa 190 mutual insurance companies. We have 160 county or local companies, the remainder being State companies. We are writing every class of insurance that is written by any other company. We can just as well afford to do that, and save the patrons of that class of insurance just as much money in proportion as we are saving in our local companies. That being the case, I think it is highly necessary that through your State organizations and the national organization we should endeavor to so modify our laws as to permit Indiana and all other States to organize and carry and write all classes of insurance for the protection of the people. When you do this you have, not only the farmers standing behind you in this particular, but you have all classes of business men. Now if there is any one thing a business man likes it is to save expense. In that he is like the farmer.

There are many questions arising in regard to mutual insurance that local companies have not tackled. Some of these relate to the manner of doing business, the manner in which we collect our fees or assessments, and the amount we collect. It would surprise you if I were to tell you there are mutual companies in the United States that collect more from their patrons when they write the policies than board rates. But they pay that back at the rate of 20 or 60 per cent. when the policy is canceled. When the people become interested and understand this method it is, I believe, just as satisfactory to collect just what we need as we go on. In Iowa we simply abhor a reserve. We don't believe in taking money from the people until we need it, and we always have been successful in getting what we ask for and paying our losses and expenses.

I speak of this to show you there are many things coming up for discussion in these State meetings we have not run up against before. There is one point I wish to call attention to that ought to be considered by every company—the classification of risks. Old line companies do this, especially in mercantile risks. I think when you come to give this matter serious thought you will conclude it is to your interest, or to the interest of the companies, that you classify the risks. The necessity for this is greater now than in years gone by, from the fact that our farmers build now under improved methods. If there is any benefit in the protection which modern improvements give, the man who insures the property ought to have the credit for it. I remember years ago when we used to write insurance out on the prairies we would take a risk if a stovepipe was running through the roof. The people were poor and did not have the money to buy brick for the chimneys. When we wrote the insurance we took the chance. It was quantity and not quality we after in the beginning. Now we will not write or accept any policy on a building that has a stovepipe running through the roof. We have made that classification, and buildings that were erected years ago are greater fire traps than the modern buildings.

I am going to call your attention to a fact that has been talked of and discussed in our Iowa meetings in regard to lightning rods. That will apply to the classification of your risks. For twelve years I was president of the Sac County Farmers' Mutual Insurance Company, and the secretary reports that he has 60 per cent. of his buildings rodded. The time has come when we should classify farm risks as well as mercantile risks. If you do this you will save a large amount of money. I made an address before the Iowa State Convention on the subject of "Shall we take any measures to lessen the hazard by lightning?" I wrote to 170 fire companies and got 111 replies. The result of the testimony furnished me by the 111 mutual insurance companies was that they were saving 50 per cent. on all buildings rodded. That goes to show that we have not yet reached the zenith of the cheapness of co-operative insurance. That is one reason why our State and national conventions take

hold of the matter of recommending the use of a good lightning rod. It is not only a saving to the company, but it is a saving to the man who uses it. You have only two-thirds of the value of your buildings insured. If a farmer has a good lightning rod he is helping to protect the other one-third.

Now in regard to the State companies that do a general insurance business. I understand you have none in this State. I would recommend that you change your laws. You should have equal and just rights with all other classes of insurance. Today a stock insurance company can come into your State and meet the requirements of the insurance department and organize any kind of company they see fit. You are hampered and can not do this. Then if you have State companies you can reinsure. You have a lot of people in your State that would like to take advantage of the cheap rates by insuring mercantile risks in a mutual company. It is perfectly safe to do this. We have some ten or fifteen companies insuring mercantile property in the State of Iowa, and they are doing a successful business. They collect a higher rate and what they do not need goes back to the members. I would recommend that you appoint a legislative committee to look after the revision of your laws for this express purpose. We have a company in the State of Iowa that has some twenty-six million dollars of insurance on town residences only. I think they have made three assessments of one mill each in the last 11 years. There is no reason why you should not have such companies; I know you can run a State company just as well as a county company.

We have been asked by many States to organize a national fire insurance company. We shall attempt to organize a company that can go into all the States and relieve the companies who would like to place a heavier insurance than they can through their local companies. Such States as Indiana that can not write mercantile property or town property, or that can not place enough insurance in their home companies on farm property, would be benefited by this. There are other States that write mercantile property, and all classes that need to reinsure their property, who would be benefited by this system. This national company would not assist us in Iowa because we have about enough insurance companies there to take care of all the State insurance. You certainly need such companies in your State. You have men who are capable of conducting the business of State companies. We have in Iowa and we are doing it. We have the largest mutual company in the United States, if not in the world, all run by farmers. It was started by farmers; it is a child of our State convention, and it now has one hundred and six million dollars of insurance. The secretary is nothing but a practical farmer. I refer to the Tornado Insurance Company of Iowa. We have a town dwelling company that has from twenty-six to thirty million dollars of insurance. I believe it is the cheapest fire insurance company in the United States. It writes simply detached residences in towns and cities.

We have great mercantile companies carrying all kinds of risks carried by other companies. They all pay their losses promptly, their assessments are not burdensome, and the mercantile people are satisfied. I want your State to fall in line and do this kind of business. We are not making any money out of it, but we are saving a whole lot. That is where we come out ahead. There are no high salaried officers connected with these companies. The men who work for us earn all the money they get. It is a cheap proposition, and we are getting our insurance at actual cost.

I want to say one word in regard to the application. I do not want to take issue with Mr. Tufts; his ideas in the main are good. It is unnecessary to print your articles of incorporation and by-laws on the application. It does not make your contract any more binding, and if your agents are like ours the man who signs the application never gets a chance to read what is on it. If he reads the face of it he is doing well. You should, however, print the articles of incorporation and by-laws on your policy, then send it with a circular letter to the man asking him to read it, and if he does not like it to send it back. Then when he signs it he agrees to abide by the articles and the by-laws. He also has a copy he is bound to keep as long as he is insured.

I want to say a word in regard to live stock. It is the inclination of the insured to raise up the amount carried on his buildings as much as he can. It is also his inclination to crowd down the live stock as much as he can. We came to the conclusion we had to do something to protect the members from excessive losses on live stock, principally by lightning. Therefore we compel them to take out at least 50 per cent. of the value. If we have men who are feeding cattle and want to carry the full value of their fat steers, under the applications they can do so. If they want to carry any registered animals of any kind for any amount they may do so, but they must describe the animals and there must be some evidence when the application is taken that the animals are worth the money they say they are. Then if a man has a loss we pay him the money, provided he can show the animal was in as good condition when it was killed as it was when the application was taken. If you do not do this you will be paying for a lot of high-priced cattle and horses. We say we will pay \$30 a head for common cattle and \$125 for a horse. If a man wants any more protection than that he must specify it and specify the animal. It is always safe to let the company specify the kind of contract they will accept. When a company makes its own contract and a man signs it in good faith, the company is under obligations to carry out its part of the contract in case of a loss.

I am glad to have this opportunity to meet you, and if there are any questions I can answer in a general way in regard to any kind of insurance, I shall be very glad to answer them. I thank you for this opportunity of meeting with you, and for your kind attention.

Mr. ———: Did you ever try the uniform policy for your local companies?

Mr. Forbes: That has been discussed and men have been asked to write on it. They would read the papers, there would be a little discussion, and that would be the end of it. You can not do it, gentlemen. A uniform policy, as I understand it, would be something established by the State. I think the stock companies have demanded a uniform policy, or, in other words, that uniform conditions be printed on the policies. Our policy is simple. It is a copy of the application, with a little added at the head and at the close to make it in the form of a policy. Besides this, the policy has the articles of incorporation and the by-laws printed on the back. We all have practically the same kind of policies, but we do not have the uniform policy.

THE POLICY.

B. L. BARRETT.

The point I wish to bring to your mind is the printing of the by-laws on the back of the application. We have long thought that useless because the men who are insured do not read it. It is printed on our policies.

I find quite a diversity in the printing of policies. We are all aware what a policy is for. It is protection offered by some organization whereby you may have restored that which is lost. It may be of a double character. The policy may be of a valued nature or an open nature. It is a valued policy when the value of the property is set, as in buildings. On personal property it would have to be open.

I have here a farmers' mutual policy which has no by-laws on it. Perhaps the by-laws are furnished in a separate pamphlet, but it is better always to have them printed on the back of the policy. The policy holder may lose the little book, but he will always have them on the policy.

When we take an application we permit a man to make it on a reasonable basis of what he thinks he will carry during the year. If he has a lot of grain after threshing, or something of that kind, we provide a temporary policy to cover that grain. As long as he holds this he is protected. When he has sold the grain he sends the policy back to us. The rate is the same as for other insurance. It is simply to protect the farmer while his barns are full.

Mr. Johnson: Do you charge a fee for that? We make a charge for the extra work.

Mr. Barrett: No; I work by the year and they pile everything they can on me. A great many of these policies are asked for over the telephone, and the directors make them out. The man who has the property does not have to sign the policy.

Mr. Mendenhall: Where we make one assessment a year some of the members take advantage of these special policies.

Mr. Barrett: We do not make assessments at specific times as you do. We make an assessment when the losses run up to a certain amount, and the members never know when they will be made.

We make the assessment cover the time the insurance was in force. A man is assessed on a special policy of this kind for all the losses that occurred while the policy was in force.

Mr. Bray: We have the same plan. We charge a fee of one dollar.

Mr. Kirkman: We have a small slip we call a special policy of insurance. It has to be attached to the regular policy held by the party and bears the same number. It thus becomes a part of that policy so long as the insured carries it. We require our applicants to sign these slips. In signing them they agree that it is subject to the same rules as the regular policy. We charge 25 cents for the slips. That goes to the director taking the insurance to pay for his trouble.

Mr. Forbes: They say open confession is good for the soul, and I have one to make today. I have learned something here which I believe is a very good thing for the members of our mutual companies, but not a very good thing for the companies. This is the first time I have ever heard of farmers carrying special insurance on grain. You would probably do the same thing with stock. You do not carry much insurance on grain in the regular policies where you have those specials. Whatever you save to your members you save in insurance. While it is not so good for the company, I believe it is a good thing, and whatever you save to the members you save in the end to the company.

Mr. Collier: What points do you consider should be in every policy?

Mr. Barrett: I prefer a simple contract. I would have, first, a description of the property to be insured. I am in favor of specific policies; I don't want any blanket affairs.

Mr. Collier: Do you write the owner and tenant jointly?

Mr. Barrett: Certainly. The tenant gets the same kind of a policy on his goods that the owner of the building gets. We have joint policies, and have no trouble about that.

Mr. Clore: In this State an insurance policy is a part of a man's estate. In that case the insurance belongs to that estate until it is administered and divided up.

Mr. Jones: I am certain the law would hold that way.

Mr. Collier: The courts have decided that insurance comes down in succession in case of death, the same as any other property.

THE POLICY RECORD BOOK.

L. E. COLLIER.

As you well know, Mr. President, I have repeatedly suggested in these State meetings the advisability of a uniform policy and application. That would make a uniform record book. I can only speak on the subject assigned me by using the plan of policy and application I use. This plan may not apply to your companies at all. Still I believe a policy ought to conform so it might apply. There would not be much advantage to any one in using this unless we all used the same form and saved money on our printing bills. My book cost me \$22.75. If we had a quantity made at one time the cost of each book would be very small.

(Mr. Collier then exhibited his book and described his method of keeping the records in detail.)

Now I wish to speak a word about short term insurance. We carry two columns of the short term business. It is easy to do it equitably, justly and easily, getting not one cent from any man he should not pay, and having every man pay exactly what he should pay. When the assessment is made all we have to do is to refer to the column fixed for the special policy. Suppose a man takes \$500 on the first of August on wheat in the barn, but before you make the next assessment the wheat is sold and the policy canceled. That does not save him from paying the assessment; we have the record here and the assessment is paid. The assessment will be for the life of the special policy.

Mr. Forbes: Suppose, for the sake of argument, we say you issue a special policy on the first of June and on the first of September it is canceled. You have had no losses while it was in force. Do you make any assessment at all on that policy in that case?

Mr. Collier: No, sir. We have not made any assessment on any other policy during that time. and why make one on that?

Mr. Forbes: There is where I think you make a little mistake. Can you afford to burden your books with this insurance, and your secretary and directors with the work and not charge more than the fifty cents for making the enrollment? The company is to some expense for printing and other things all through the months the policy is in force, and I think the special policy should pay a share of that expense.

Mr. Collier: It does. Our company charges an expense account against every policy every year.

Mr. Kirkman: If no loss occurs during the time a special policy is in force we charge twenty-five cents for taking it out and two and one-half cents on each hundred dollars to pay annual expenses. Every policy carried pays five cents a year on each one hundred dollars, for expenses.

Mr. Collier: The parties that carry the best lines of insurance are the ones who look most carefully after their short term policies. These are the men who come in and say they want to take additional insurance. Of course short term policies can only be taken by members.

We write the personal property of tenant farmers. Suppose a man lives on Mr. Smith's farm this year and next year he moves to Mr. Jones' farm, we must know where he is going. We make an endorsement on his policy allowing him to be insured in his new location. There is but one place in which the goods are insured. When the goods are moved the insurance holds good in the new location.

We give notice of cancellation. I believe the officers of a company should have jurisdiction enough over the business so that if they believe a risk is inimical they shall have the privilege of canceling the policy after due notice. Again, in the event the provisions of the policy have not been complied with, or if the assessment has not been paid, the company must make itself safe by mailing an official notice of cancellation to the holder of the policy. It is not enough to say on the policy that unless the assessment is paid within a certain time the insurance will cease. Whenever you notify a man that his policy is canceled for non-payment of assessment and dues you are safe. Our notice says the policy may be reinstated within a certain time. If I am very particular I register this notice.

REPORT OF A LOSS.

WILLIAM WATLINGTON, MADISON.

Mr. President and Gentlemen of the Insurance Companies' Union—On receiving notice from our Secretary assigning to me the topic "Report of a Loss," it was in accepting the same that my thoughts were along the line on which our company makes these reports—which are made in connection with the adjuster's report—but on receiving the printed program, I found the "adjuster's report" and "report of a loss" were separate divisions of this general subject, a "Model Mutual Insurance Company."

So in treating this subject along the line which I have concluded was intended by the program I fear I will not be able to give, or even suggest, an outline for an ideal "report of a loss" by the insured.

Our company prescribes in its by-laws that when any insured property shall have been destroyed or damaged by fire or lightning, the insured shall forthwith notify the secretary in writing, giving a particular account of such loss or damage. But this requirement on the part of the insured has never been fully complied with—and many times not even partially carried out. So it is that our company makes these reports through and in connection with the report made by a director, who adjusts the loss.

The "report of a loss" is a very important part of the record and work of a mutual insurance company, and should be as full and descriptive of the circumstances connected with the loss as it is possible to be given. But probably no other part of our work is so often neglected, especially when a loss occurs and is supposed to be an honest one—accidental and unavoidable. In such cases it is more often thought not necessary to give any particular account of the circumstances connected with such loss or damage, because it was thought to be accidental and seemingly unavoidable, and besides, the owner was an honest man. Nevertheless, it is almost invariably the case that when a loss by fire occurs the owner or insured, however honest and upright may have been his past record, someone is always ready to suspect and censure him for wrongdoing. This more often occurs when high insurance is carried, but those so disposed to be suspicious of nearly everybody are always ready to condemn the property and fix their own valuation at such figures as will always make the insurance too high. So when the company neglects to make full these reports of a loss, it gives those suspicious and fault-finding members a shadow of a reason for their complaint. When, on the other hand, a complete report is made, full in all its details, the company has in this particular done its best, and there is no shadow to serve as a screen upon which to reflect a reason for complaint.

We have reason to believe that few lines of business require a more careful record and exact account of its work than does the business of a mutual insurance company, because of the numerous individual interests connected with it, which, in number, is equal to its members or policy holders, each of whom is directly interested in the management of the business, and should realize this fact with sufficient interest to post themselves from time to time in regard to the standing of their company, and the secretary should be prepared to lay before them such records and statements of the business as they may wish to investigate for themselves.

Therefore, because of these many interests involved, and the diversity of understandings among them, makes it doubly necessary that many of the transactions should be statements in detail, and to none other would this apply more proper, and in place, than to the report of a loss.

Blank forms should be supplied by every company for making of these reports, and should be full and descriptive enough of the property

that anyone might understand upon examination. They should also be sufficient to contain statements giving all the information connected with such loss as could be gotten from those best known to the circumstances. At least two disinterested parties should make statements, together with that of the owner of the property, who should give the cause of said loss, as near as would be possible to do so. If these blanks are not sufficient for such statements, they should be affixed to the report and made a part of the same.

These blanks should also be provided with a sheet properly ruled to receive and itemize all personal property that has been damaged or destroyed, which list should be filled out, giving the cash value and insured value of each article. These values to be fixed by those best known to the property, and if possible to include one disinterested party; and should also be provided with a proper blank for making oath to the same.

These reports to be kept on file for future reference, and for examination by any and all policy holders who may wish to know and learn of the circumstances connected with any particular loss.

For convenience in referring to these reports, and other reports, statements, etc., of the business of the company, I would recommend that each be recorded in full in a record journal especially kept for that purpose, with a proper index to same. These references then can be made without the loss of time, and probably some patience besides.

REPORT MADE TO POLICY HOLDERS.

R. A. KIRKMAN.

I have been asked to give my opinion of what kind of a report should be sent out to the members of a mutual insurance company, and as this is a brief subject my remarks consequently will be brief also.

A report as I would make to the members of a model insurance company would be something like this:

In the first place would be to consider what a model insurance company was, and of what it consisted.

In my estimation a model insurance company (especially among farmers) is a purely mutual company. One in whose ranks there are no secrets and where none but honest, conscientious members are found, where all incomes and expenses are made known to each and every member alike. Now this being my term of a model insurance company, I would make my report as plain and explicit as possible, showing all the workings of the company from the most minute to the greatest extravagance, in whatever line it was found, giving everything in as plain a form as could possibly be, that the most simple of its members could understand its purport. Of course I would take into consideration the expense of printing, not allowing myself to go into unnecessary exactness to the extent of extravagance.

While our Madison County company possibly may not be a model insurance company in every sense of the word, our reports, which we make twice a year, are, we think, what would become a model insurance company to send out to its members.

It shows forth in as compact a form as possible all losses and expenses that have occurred during the six months previous to its being sent out, itemizing each article separately. It shows amount of insurance in force, number of members holding insurance, and the last one sent out for the year tells time and place of the annual meeting, gives a cordial invitation to all its members to be present, and most important of all, it informs each member individually of the rate of assessment, the amount of his indebtedness to the company. Tells him when and where to pay the same, and also apprises him of the consequence of allowing his assessments to go unpaid beyond a certain length of time. And I feel it is every member's duty to try to make the company with which he is connected "a model insurance company."

Mr. Clark: The paper just read touches on a very important subject. As far as it went it met the exigencies of the case very well. Having written about eighteen annual reports myself, and having to address about five thousand members a year—with over seven million dollars insurance—I have found out there are questions coming up every year that are considered paramount. Some of our members become uneasy and uncertain as to the position the company ought to occupy. We have made it a prominent part of our report to deal with these questions. We tell them where every dollar of the money comes from and where every dollar of it goes. The men who read the report every year will be as well posted as to the workings of the company as if they were in the office. In such reports the objections of the old line companies ought to be met and dealt with. Farmers are very busy men, and they can not give as much time to the study of this kind of insurance as the secretaries are compelled to give if they meet the questions that come up every day. Your reports should be so written that they will strengthen your members. We have members that have been with us thirty-three years. Our members leave us when they die, but as a rule they stay with us while they live.

President Jones: The managers of every company should aim to provide such reasonable information as will convince every member that the affairs of the company are all right.

Adjournment.

The third session of the meeting was called to order at 9:30 a. m., Friday, January 6th, President Jones in the chair.

President Jones appointed the following committees:

Auditing Committee—W. A. Kelsey, L. W. Dunfee, C. G. Hunter.

Committee on Resolutions—Enoch Drumm, D. O. Dilling, William Watlington.

Legislative Committee—Aaron Jones, D. F. Clark, Hon. George V. Kell, R. A. Kirkman.

PLAN BY WHICH MUTUAL INSURANCE COMPANIES MAY ASSESS
PROPERLY RODDED BUILDINGS AT A LESS RATE
THAN THOSE NOT RODDED.

L. W. DUNFEE, COLUMBIA CITY.

Whether it would be advisable for a mutual insurance company to make special rates for certain classes of risks is a debatable question, and before a company decides to do it, it would be well to canvass the matter thoroughly. It might lead to much contention among the policy holders, confusion and trouble for the officers, and work disaster to the company itself. In order to have a mutual company each member must place his property on a common basis with that of every other member, although he may have a much better risk than many of his neighbors. The man who has only live stock insured must agree to help pay for his neighbor's barn that may be burned by a tramp.

The man who has a brick house with a metal roof and heated by a furnace must place his property on a level with that of the man whose risk is not so good. It would be impossible for mutual companies to classify the risks as the old line companies do and make different rates. It would break the bonds that bind the members of a mutual company together.

It has been demonstrated here by the reports that buildings protected by good rods are less liable to be struck by lightning than those not so protected. Now, whether these facts will warrant the placing of such protected buildings in a class by themselves and giving them a less rate, I will leave for the gentlemen present to discuss.

In making a plan by which such assessments could be made, a knowledge of the by-laws under which the company is to work would be necessary. For instance, in a series of losses that had all occurred by fire, should the protected buildings pay the full or partial rate? Or in a series of losses that occurred, partially by fire and partially by lightning, what should determine the rate of assessment? All of these points, of course, would be provided for by the by-laws.

One of the first principles of mutual insurance is fairness and justice to all concerned. I can see no way whereby a rodged building could be insured at a less rate and do justice to all policy holders.

Let us assume that a company insures rodged buildings at a rate of two-thirds. I have here an assessment that was made October 10, 1903. The losses were by lightning \$2,945, by fire \$1,535, total \$4,480, rate of assessment 15 cents on each \$100. Here is also one of our policies:

Dwelling	\$ 700
Contents	150
Barn No. 1.....	800
Contents	250
Barn No. 2.....	150
Stock	250
	<hr/>
Total.....	\$2,300

The dwelling and barn No. 1 we will say are properly rodged. That makes \$1,850 worth of property that is protected by rods, and \$450 worth that is not protected. Now the problem presents itself as to how this particular policy is to be assessed for these losses. We have \$2,945 lost by lightning and \$1,535 by fire. This man had his \$1,850 protected by rods and \$450 not protected. It would not be just to charge him only a two-third rate on all his risk because part of his property was not protected by rods. Neither would it be right to charge him only a two-third rate for the amount lost by fire because his fire risk was just as great as the man's whose buildings were not rodged. So we see in seeking for justice to the man who has rods we get into complications that would tax the patience and mathematical skill of the ordinary secretary to the utmost.

If all our losses were caused by lightning the making of assessments would be a comparatively easy matter. In keeping the assessment register it would be necessary to open two accounts with each policy; one for the part protected by rods and one for the part not protected.

In making an assessment on \$3,000,000 worth of policies a full rate of 15 cents would bring in \$4,500. Now suppose instead of the full rate we charge only a two-third rate on one million and the full rate on two millions. The result is we raise only \$4,000. Now this deficit must be raised and there is only one way to do it, and that is to charge the two millions more than a full rate and the one million a proportionate increase on their two-third rate.

In looking this matter over from various points of view, and taking into consideration the fact that rods do not decrease the chances of loss by fire, and that our companies do not insure buildings for more than two-thirds of their value, it seems that we must come to the conclusion that it would be exercising good business judgment to put up rods to add more

protection to the one-third of our property that is not covered by insurance without asking any favors of the company in the way of lower rates.

Mr. Barrett: We have three classes, first, second and third. I am going to urge our people to have another class for properly rodded buildings. Class No. 1 is all wood. If I was going to make an assessment of 15 cents it would be straight 15 cents on the hundred dollars on that class of buildings. No. 2 is a frame building with slate roof, and is entitled to 20 per cent. off. No. 3 is a brick building with slate roof, and we only make a three-fourths assessment on that. The better buildings a man has the more reduction in the rate he is entitled to.

I do not see any reason why a man should not have a further reduction if his buildings are well rodded. If a man has a good frame house with a slate roof, which is insured for fifteen hundred dollars, he is allowed 20 per cent. reduction. That would be three hundred dollars, so when I assess him it is only on twelve hundred dollars. A brick house with a slate roof, insured for sixteen hundred dollars, would be assessed on twelve hundred dollars.

President Jones: If a man carries two thousand dollars of insurance, twelve hundred on a house of the first class and eight hundred on a barn, what class does the barn go into? The barn is a common wooden building.

Mr. Barrett: It is classed No. 1, as is also the personal property.

President Jones: Suppose a man has a frame house with metal roof insured for \$800 and he also has a barn. Do you separate them in the assessment? His house would be No. 2 and his barn No. 1.

• Mr. Barrett: I would assess them separately.

President Jones: When you make the assessment and one man who has had such a reduction made in his assessment goes and shows it to his neighbors who have not had reductions made, don't you have a great deal of trouble correcting mistakes?

Mr. Barrett: I did at first until I explained to them how I did business. Now they make no complaint.

President Jones: Didn't you lose a good many members at first?

Mr. Barrett: I lost no members that were reasonable men. The men who were unreasonable I did not care to have in the association.

President Jones: I ask these questions so as to bring the difficulty of carrying out such a system before the members of this Union. I wanted them to know the difficulties that would be met by a company that had been running on the level assessment plan if they should change to the classification plan.

Mr. Barrett: We had difficulties, but they were of a slight nature. We have been running under this plan for ten years. We ran on the level basis for fifteen years.

Mr. Bray: If a man owns a barn with a metal or slate roof would he have the privilege of carrying his insurance at a less rate than a man whose barn has a shingle roof?

Mr. Barrett: Yes, sir, because there is less danger from fire and lightning.

Mr. Bray: If a slate roof is struck by lightning the damage is much more than it would be to a shingle roof.

Mr. Barrett: A shingle roof is much more liable to catch fire from sparks from a thresher engine.

Mr. Young: We all know it is the custom for farmers to group their buildings. If the house, the barn and the cattle barns are near each other there is danger, if one catches fire, of its communicating to the others more readily if they have shingle roofs.

Mr. Jones: Did you ever examine the system of classification made by the old line insurance companies as to the difference of risk between a barn and a house? They make a much larger rate for insuring barns than they do for houses. In fact, most of them will not insure a barn unless the house is insured with it. If you will get an accurate report of losses you will find that more losses occur on barns than on houses. They sometimes merge the two and make a higher rate on the whole. If you bring them down to it they will tell you they have raised the rate on account of the barn.

President Jones: The difficulties you will find when you undertake to classify a risk will be very great. It will be a very difficult thing to get a classification that will be exactly equitable. In New England they make twenty-five cents difference between property occupied by a tenant and property occupied by an owner. You would not recognize that distinction. An owner of property is apt to be more careful than the tenant.

Dr. Saunders: The official board of the Madison County Insurance Company has long felt the necessity of rodding buildings, and finally hit upon the plan of reducing the assessments on rodded buildings. I believe the plan will work satisfactorily. If there is any opposition to the plan it is from the men who have buildings that are not rodded. The time is coming, however, when the majority of our buildings will be rodded. I believe this inducement will help the members and encourage them to do so.

President Jones: Suppose you have a member in your company who has a good brick building covered with a metal roof, with every other known device for safety against fire, but he does not see fit to rod his buildings. A neighbor of his may have a frame building with an old shingle roof, but has all his buildings rodded. Would you give him the benefit of the lower rate of insurance and not classify the other man or give him any benefit for his better protected buildings? If you do that, do you think the man with the brick building will be satisfied with the ruling of your company?

Dr. Saunders: He will be after he understands the conditions. I think fully 50 per cent. of the losses our company has sustained have been from lightning. While a dilapidated house may be more subject to fire than a well protected one, it is better protected against lightning if it is rodded. If a brick building has a metal roof we make a reduction in the assessment. We make a classification there as well as in the case of the rodded building. We simply put the man with the frame building that is rodded on the same footing with the man whose house is of brick with a metal roof.

Mr. Kirkman: We only give the benefit on brick or stone buildings with slate or metal roofs. If a frame building has a slate or metal roof it is in the first class.

Mr. Dunfee: The past summer we suffered very little from losses by lightning. Now in making the assessment if we charge the fellows with rodded buildings less than the other we are not doing them justice when all the losses occurred by fire.

Mr. Barrett: In the early part of the year we can not tell whether the losses will be from fire or lightning. I think my books will show that in the past we have paid out two dollars for losses by lightning to one for losses by fire.

Mr. Forbes: Suppose, for the sake of argument, that all your buildings were rodded and you never had any losses by lightning, you will have no insurance to pay for that cause. It is a plain proposition that the men who have rods on their buildings and have no losses by lightning ought to pay less, because there is no hazard there. We should pay insurance according to the hazard. If it is demonstrated that by the use of a good lightning rod the danger of loss by lightning is eliminated, the man who has rodded buildings should not be expected to pay as large assessments as the men who have no rods on their buildings.

Mr. Tufts: Our company has been running for thirty years and I do not think our losses by lightning amount to \$300. I don't say that is because we all have lightning rods. We have not made a classification.

SHOULD A MUTUAL INSURANCE COMPANY PAY PARTIAL
LOSSES IN FULL?

D. F. CLARK, MULBERRY.

That which is right, I think we ought to adopt as our rule in insurance business, just as we do in other walks of life. Now we came right up to the edge of this question yesterday, yet I have not heard any man mention the mode of insurance. I think the mode of insurance figures very largely into the adjustment question. If you insured all property for its full cash value, there is no question in my mind but that all losses should be paid in full. As a rule we insure buildings for two-thirds of their cash value. One brother said yesterday that in the majority of the companies in Indiana personal property was insured for its full value. We all have constitutions and by-laws to govern us in these matters. Our constitution says that no building shall be insured for more than two-thirds of its fair cash value. The contents of the buildings, grain, grain stacks on the farm and stock may be insured in our company for a fair cash value. Then when we come to that part of the constitution which provides for adjustment we go on and say that in case of a loss on buildings we will pay two-thirds of that loss, because we insure two-thirds of the value of that building. When we come to the contents we pay in full, because we have insured for the full value; that is, of course, up to the amount of the insurance in each case.

Now, let us throw these safeguards around us and examine the question from that standpoint. Take a house that is worth \$900, and we all understand that it can not be insured for more than \$600. That house may catch fire and two-thirds of it be burned. Of course if we have a partial loss we must stop somewhere. I am going to say in this case it stopped at two-thirds the value of the house. Suppose a neighbor had a similar house, insured for the same amount, and it was entirely burned down the same night. Now, under the theory that partial losses should be paid in full each man would get the same amount. The man who lost his entire house could get but \$600, because that was all the insurance he had, but he lost \$900. Now it is going to be a very hard matter to make the man who has lost \$900 believe he is being treated fairly when he finds out that his neighbor, who has only lost two-thirds as much as he has and still retains one-third of his property, gets the same amount of insurance as he does.

Another phase of this question is this: You put a valuation upon a building and then you put an insurance on that building. We agree in all of our laws everywhere to pay the insurance in case of loss. We agree nowhere to pay valuation; but when you pay partial losses in full you pay valuation instead of insurance. When you insure a house for two-thirds

of its value you agree to carry 66⅔ per cent. of the value of that house, and the owner agrees to carry one-third. If you pay a partial loss in full you not only pay 66⅔ per cent., but 100 per cent. In that case the man is carrying none of the risk; the company is carrying all of it. I believe we ought to pay our insurable proportion of a partial loss.

Now, the question of doing right is the one we are discussing. I know there are some companies in Indiana that pay half of the insurance. One of them was represented here a year or two ago. The representative of that company told us then what a cheap rate of insurance they had. That is all right, and if you wipe out the other half it will be still cheaper. You would have to go into two companies of that kind to get insurance. In thirty-five years our assessments have averaged us 19 cents on the hundred, and yet the companies whose representatives came here and said they paid half the insurance have had in some years assessments higher than ours. I believe justice should be done to all our members. I know there is a difference of opinion in our territory on the matter of paying partial losses in this way. When we come to discuss this question and make it plain to the members who have sustained losses they are apt to say it may be all right, but it does not put the money in their pockets.

I shall give you another illustration. We may have a member who has a barn insured for \$1,500. This man has a great many broad acres surrounding his home, and is in every way well supplied with this world's goods. He has a son of 23 who is married, and to whom he has given forty acres of land adjoining his farm. On this forty acres the young man builds a small barn at a cost of \$150, which he insures for \$100. His father has his barn insured for \$1,000. One night the lightning strikes both the big and the little barns, damages the big one to the extent of \$150 and destroys the little barn entirely. Now, you all know the company will pay the young man \$100, because that is what it agreed to pay; but under the theory that partial losses shall be paid in full the company will have to pay the owner of the big barn \$150. The owner of the big barn has \$1,350 of his property left intact, so he has not lost a cent. He has taken no risk, he has carried nothing; the insurance company carried the entire risk; but the young man who needed protection most has lost \$50. Why should we carry three-thirds in the one case and only two-thirds in the other? I never could understand. That is paying valuation, not insurance.

Mr. Forbes: I am from Iowa, and I have been in the mutual insurance business for twenty-five years, but I find I have still a great deal to learn about it. If you carry insurance on the \$1,500 barn and also on the \$150 barn, and if the latter is wiped out of existence and the former is damaged to the extent of \$150, are you paying a pro rata share to the owners of these buildings in proportion to their losses, or in proportion to what they have paid? Is it not a fact, if your theory is correct, that in

only paying two-thirds of a partial loss the man is only protected for two-thirds of the two-thirds in case of a partial loss? He is not paying on two-thirds the valuation of his building, but only two-thirds of the two-thirds valuation in case of a loss. Out in Iowa we think we are lucky if we get what we buy in insurance, but we do want what we pay for. If Mr. Clark's theory is correct I am going back to the State of Iowa and tell the companies there how they can save money. Now I want to know if this is a correct principle? We have a great many partial losses, and if we can get rid of paying a proportionate part of these partial losses we are going to make money in Iowa, although I am afraid our members would not feel they were getting what they paid for. If I insure a building worth \$1,500 for \$1,000, the only reason you take that building is on account of the moral hazard; the only reason you make a distinction in regard to valuation is on account of the moral hazard. You say to the man who wants insurance, "Because you may be dishonest and burn your buildings we will only carry two-thirds of their cash value; but in case your property is partially destroyed the company agrees to pay you face value up to the extent of your loss."

Mr. Clark: Is this the first time you ever heard of this plan of paying partial losses?

Mr. Forbes: Yes, sir.

Mr. Clarke: When Brother Forbes goes home and begins to study over the justice of this plan I think he will change his mind. I believe insurance is a matter of justice, and I can not conceive how we can treat two men equally when we pay one man the same amount of money as another when one has lost one-third more than the other. In the case cited one man has lost all his barn and the other has \$1,350 worth of barn left. In that case we do not pay him 66 $\frac{2}{3}$ per cent. of his loss: we pay him three-thirds of his loss. We owe two dollars out of three all the time, and the other man carries one-third, which he agrees in the beginning to do. We settle on that basis, and are certainly doing what we agree to do in our constitution and by-laws.

Mr. Forbes: There is only one thing I wish information in regard to. A man has buildings worth nine hundred dollars, on which he gets a policy of six hundred dollars. Another man gets a policy for the same amount. They both pay the same amount of fees and assessments, both losing the same amount of money so far as the company is concerned. The company knows no one-third in case of a loss; it takes no notice of the one-third the man himself has lost. It is only the actual loss the company is looking at, and consequently they owe the man who has lost his entire building six hundred dollars. The other man saved one-third of his house, but as he has paid for six hundred dollars insurance the company should pay

him that amount. He has paid as much as the other man, and I can not understand why he is not entitled to recover as much. It seems to me it is begging the question altogether when you undertake to divide the dollars into $66\frac{2}{3}$ and $33\frac{1}{3}$ distributed over the entire building. When a man's building is damaged there is no distinction in your application or policy; you simply value that man's building at so much and insure it at so much.

Yesterday you discussed the question of loan companies taking your policies as security. There is not a loan company in the United States that would take your policies on a two-thirds valuation of loss. Just as soon as you cut down the rate of your payment of losses you destroy the face value of your policy, which is taken into recognition by all loan companies. I think you will find the face value is injured one-third by this method.

President Jones: Have you a clause in your policy that provides in case of a partial loss on buildings you pay two-thirds of the loss at the time of the fire?

Mr. Clark: We have.

President Jones: In case of a partial loss on personal property, would you pay that in full?

Mr. Clark: Yes, sir; because we insure personal property for its full value.

President Jones: Is that fair between the two classes of insurers? If that is the case, is your constitution based on equity?

Mr. Clark: I think it is. I will say for your information, Mr. Forbes, that from Chicago, Cincinnati and away up into the New England States, there is not a loan company that will not take our policies. The Northwestern does refuse, but I am told they will not take an old line policy unless it is a paid-up one.

Mr. Johnson: All old line companies reserve this right. This Association reserves the right to repair or rebuild in liquidation of any and all losses. If lightning strikes a building and damages it only to the extent of \$40 or \$50 the company can well afford to repair it, or let the owner have it done under the supervision of the director and pay for it. No member of our company complains of that plan, and it certainly puts the assured in good standing with the association. However, if a nine hundred dollar building with six hundred dollars of insurance on it should be totally destroyed we reserve the right to build. If we should make up our minds to build where are we? Are we going to put up a nine hundred dollar building or a six hundred dollar building? Usually when farm buildings get on fire if two or three buckets of water do not do the

business, you might as well begin to carry out your goods. There are very few partial losses of farm buildings. If it goes beyond a couple of hundred dollars it is pretty sure to take the whole building. In case lightning strikes a nine hundred dollar building and damages it to the extent of one hundred dollars, I don't believe any mutual company can afford to say they will only pay two-thirds of that loss. If the house should be entirely destroyed it would be our duty to pay the full two-thirds for which it was insured. In our by-laws we say we have a right to repair or rebuild, and we do so.

President Jones: You do not claim that section would be worth anything if you only paid two-thirds the amount of any damage that might occur to a building. You could not repair a \$150 damage with \$100. A few years ago the old line companies doing business in Indiana agreed upon a rule of co-insurance compelling the insured to carry a certain proportion of the risk. If the insured did not carry 20 per cent. of the risk, in case of a partial loss they would pay only 80 per cent. of it. Then the Legislature of the State passed a law which prohibited that sort of insurance company doing business in the State. Now you have not taken the 80 per cent. rule, Mr. Clarke, you have taken the 66 $\frac{2}{3}$ per cent. rule. Would you not come under the statute of co-insurance because you compel the insured to bear a part of the loss?

Mr. Kelsey: Did not the Legislature exempt farmers' mutual insurance companies from that part of the law? I am sure it did.

Mr. Mendenhall: Suppose the roof of a dwelling house should catch fire and burn half of it off, what part would you take to adjust that loss? Would you put on one-half of the roof, or would you simply put on two-thirds of the part that was destroyed? How would you adjust that?

Mr. Clark: We would not build anything or repair anything. We would find out what the roof was worth, what part of it was destroyed, and pay two-thirds of the value of the part destroyed.

Mr. Tufts: We have a clause in our by-laws which provides that we shall pay losses as they occur and as they are approved, up to the amount of the policy-carried.

Mr. Heagey: I am here almost entirely for the purpose of hearing this discussion. We have had this question up for some time. We have consulted our attorney in regard to the matter, and he says there is no law that will permit us to settle a loss on a partial basis; we must pay the partial loss in full. We have revised our by-laws to provide for the payment of partial losses in full.

Mr. Clark: Many years ago when we were incorporating this clause in our constitution our treasurer and myself differed in regard to the ad-

visability of it. We were appointed a committee to investigate the matter. We went before the judge of the Circuit Court and both made statements. We agreed to abide by the decision of the judge. The judge decided in my favor and we adopted that clause in our constitution.

Mr. Doup: Suppose I own a house worth fifteen hundred dollars and have it insured for one thousand dollars. I am told by the secretary that that is all the insurance I can carry on that building. When I ask who is to carry the other one-third he says that I must do that. That divides the insurance once, and if the house is partially burned and the company does not pay that partial loss in full it is dividing it again. The company divided the responsibility in the first place and made the owner assume one-third of it, without any possibility of his getting anything for that one-third if the house was totally destroyed. The company takes the risk on two-thirds and ought to pay every cent of loss up to the amount of that two-thirds.

Mr. Apple: Mr. Forbes says we buy what we get. That is true. Take the fifteen hundred dollar barn and the owner pays on the one thousand dollars insurance he has on it, according to our rules, two dollars a year. If he has had it insured for ten years he has paid twenty dollars. The man who has the \$150 barn only pays two dollars in ten years. When he meets with a total loss we pay him one hundred dollars, and when the other man has a partial loss of \$150, we pay him that in full. Would it be fair to pay him only \$100 when he has been paying on \$1,000 for ten years?

Mr. Newsom: I should like to ask Mr. Clark why barns and houses are not insured for the full value the same as personal property?

Mr. Barrett: On account of the moral hazard. Sometimes in the history of buildings they depreciate very rapidly, and sometimes the changes in the construction of buildings is very great. Sometimes people want new buildings, and if their old buildings were insured for their full value they might get on fire and burn down to make way for the new.

Mr. Newsom: If moral hazard is going to be distributed through this partial loss, why not insure the building for its full value, and then make any loss that occurs payable to the extent of two-thirds? It seems to me when a question of moral hazard is considered in the case of farm buildings the whole purpose of making the insurance at two-thirds has been served.

Mr. Johnson: Suppose a building is appraised at three thousand dollars and a mutual company will not take more than two thousand dollars on it. If the owner goes to a responsible old line company and they will take one thousand dollars on his property, what amount does the mutual company have to pay if it burns?

Mr. Jones: Unless they were notified they would not have to pay anything. If it was done by agreement of both companies they would pay two-thirds and the old line company one-third of the loss.

Mr. Clore: If there is a concurrent insurance on the property the loss is pro rated. Suppose there is a partial loss and the insurance carried in the mutual is one thousand dollars and on the stock is five hundred dollars, the mutual company will pay two-thirds the partial loss and the other company one-third.

REPORT OF DELEGATE TO THE NATIONAL ASSOCIATION.

DR. SAUNDERS.

Mr. President and Gentlemen of the Convention—In presenting this report as your delegate to the National Association held at Topeka, Kan., I shall endeavor to be brief. I do so as a matter of necessity, as I find that so much was accomplished and so much was said that it would require more than an ordinary volume to relate it. The matter accomplished was all for the advancement and promotion of mutual insurance interests, and the things said for the edification and instruction of delegates assembled. Along these two lines the meeting was certainly a successful one. In point of numbers it surpassed any since the organization of the association. I have been present at these yearly meetings since 1899, and am able to see the wonderful growth and the pronounced effect it is having in the insurance world. Each year brings in additional delegates and additional States until at this time almost every State in our Union is represented. As I viewed this assembly of mutual insurance men it was a gratifying assurance to me that while I was a laborer in the mutual insurance field that I was not engaged in a work that was only experimental in its nature. I have the assurance in no uncertain way that the day of trial test was over and that the accepted verdict of the people was the universal approval of the mutual plan. Not universal in the sense that all men insure under this plan, but that the plan in itself is reasonable and safe in all respects. It was gratifying, too, to me, as I viewed this body of men to know that I stood face to face with the best intellect and the best representative body of insurance men in the land. Men of broad minds and of the kind that have engraven success upon their banner in any and all undertakings of life. Without going into detail of the four days' session I shall only attempt to report to this association some of the more important features of its work and the one very important one is the one I can not here give, and that is the general discussion engaged in by the delegates on various questions pertaining to methods, etc. These discussions were both interesting and instructive, and is one of the best schools of instruction that any one seeking information in this line can attend.

The proposed purpose of the organization of a national insurance company to be known as the "National Underwriters" brought out a lively discussion. A motion that the National Association extend a vote of encouragement to the movement was carried.

The object of the organization of the National Underwriters is especially directed to the interests of small companies, many of which have a limit to the amount of their policies which necessitates taking additional insurance with stock companies, a procedure that generally works evil and evil influences and impressions against mutual companies. In case a policy is greater than a small company desires to carry the insured may take additional insurance in the National Underwriters, and by this means do not become antagonized with and by stock companies. This is more likely to exist in town mutuals where much of the insurance is taken in blocks, so to speak, of five, ten or twenty thousand dollars. In a State like Indiana, where we have no state companies, but many companies of one and two counties, the National Underwriters would be of excellent service in assisting us in large risks, and by this means holding all that we can to the interest of our mutual system. I desire to state, however, that this National Underwriters is not organized by the National Association, but that the movement having been started by men who saw the necessity and advantage of it, they have only asked the endorsement, and a word of encouragement from the National Association, which was given by a decided vote.

The National Legislative Committee was enlarged by the appointment of a member from each State. Judge E. M. Coffin of Lincoln, Neb., is chairman of that committee. By the appointment of a member from each State it enables the chairman to more readily get at the facts and needs of the various States in matters pertaining to needed legislation. Mr. R. A. Kirkman of Pendleton, Ind., who is the present secretary of the Farmers' Mutual Company of Madison County, was designated as the man to represent Indiana on that committee.

I wish to repeat the suggestion I offered in your meeting last year, that the State Legislative Committee appointed by this body work in unison with the national committee, as we can get very much assistance from that source. The fact that the State committee is strengthened and supported by the assistance of the national body will add much weight in the influence we may have in the Legislature, and besides we should endeavor to get laws that govern mutual insurance as nearly uniform in the various States as is possible, and in doing this we greatly need the advice, influence and council of those who are working to that end. I desire in this connection to read to you from article VI, section 4, of the constitution, and also the report of Judge E. M. Coffin, national chairman, at the Topeka meeting.

As a matter of protection against the operation of fraudulent companies assuming to be mutual, a resolution was passed creating what is

known as the "Board of Underwriters of Mutual Fire Insurance Companies of America." The object of this board is to determine the standing and legality of companies operating in the mutual name. Many fraudulent companies have been operating in some of our Western States, and have proven to be swindlers whereby the people have been deceived at their great cost and also at the expense of the honored name Mutual.

There has been no means devised by which these fraudulent companies can be detected until after they have accomplished their work and are then ready to move to new fields with their booty. These companies cannot be compelled to submit their plans of operation for investigation by this board of underwriters, neither will they request it, but the purpose of this board is to reach them in a negative way, by asking all companies doing a legitimate business to submit their plans for investigation. A company that attempts to do business without this certificate of good standing is open to suspicion, and may soon be detected. But understand that no company is required to submit to an examination by this board. That is left to the discretion of each individual company, but it occurs to me that a certificate of good standing and approval by the National Board of Underwriters would certainly be a good recommendation to present to the people when soliciting insurance, and a splendid weapon of defense against attacks frequently made upon us by stock companies. The cost of such application and certificate is ten dollars for a State company, five dollars for a district company, two dollars for a county company and one dollar for a township company.

I shall consume too much of your valuable time were I to attempt to make a more extended report of this interesting meeting, but I desire to assure you that while it was interesting to see and to hear the work accomplished, that in effect and in its far-reaching results it is equally interesting to you, and to every individual mutual insurance company in the United States. Interesting by reason of the fact that the National Association stands as a protector and a promoter of the mutual insurance interests in all of the States. Gigantic in its construction and powerful in its influence for good it is the shield and helmet to all mutual organizations and should be strengthened by the support of every mutual company in the land. Every company that is identified with the State Mutual Insurance Company Union of Indiana owe it to themselves that they see that they send delegates to the next meeting, which will be held in Chicago, March 7, 8, 9, and 10, 1905. Every president and every secretary of such companies owe it to themselves and to the companies they represent that they attend this meeting, as by so doing they will gather more knowledge and assistance in the wise management of their interests and thus infuse new light and vigor in the work before them. This I say you owe to yourselves, but let me add also that you owe very much more to an association that has fathered your interests unsolicited, and association that seeks the prosperity and welfare of every mutual company, no

matter how small it may be. I have said unsolicited. Can we today realize the fact that while mutual insurance was for years struggling and battling for existence, each individual company acting independently and alone, that there comes to the rescue a band of noble men organized as a national association, and which today is the thorn in the flesh to all stock companies? Their influence is feared and felt, and as a result of this national work in our behalf our interests have grown and prospered. The State of Iowa perhaps is better represented in the National Association than any other, and as a result I wish to show you in this connection the marvelous growth of mutual insurance in that State. It is found by the last Auditor's report that the amount of insurance in force in strictly mutual associations had increased from \$49,735,098 in 1888 to \$392,698,481, and that the average amount carried by each association in 1888 was \$474,384, while on January 1, 1904, the average amount carried by each association was \$2,082,624. This is certainly a marvelous growth, but the promoters of this great work are also the most active and enthusiastic workers in the National Association.

In conclusion of this report I desire in the language of the Psalmist to entreat you to "Lift up your eyes unto the hills from whence cometh your help."

Mr. Forbes: I would like to add a little item to the report. We have what is called the Manual Committee. We are getting up a mutual insurance manual that gives the report of every mutual insurance company, gives all the methods of doing business and all the particulars we are gathered here to discuss. I invite Dr. Saunders in inviting you to come to the meeting in Chicago. There is where we started in 1894. Come to Chicago and meet with us again, take part with us and help us as we are trying to help you.

Secretary Nowlin read the following report:

Indianapolis, Ind., January 5, 1905.

To the Officers and Members of the Farmers' Mutual Insurance Companies' Union of Indiana:

Gentlemen—As your Secretary I beg to submit the following report for the year ending January 5, 1905:

RECEIPTS.

Balance on hand January 8, 1904.....	\$ 27 59
Dues received after January 8, 1904.....	16 00
Cash from Chas. Downing, secretary.....	10 00
Assessments from twenty-nine companies.....	72 59
Membership fees January 5, 1905.....	9 00
Dues January 5, 1905.....	46 00
Total.....	\$181 09

DISBURSEMENTS.

January 22, 1904, stenographer.....	\$ 20 00
January 23, 1904, stationery.....	4 75
January 23, 1904, express.....	25
April 28, 1904, envelopes.....	30
May 4, 1904, express.....	30
May 23, 1904, printing 2,500 reports.....	102 35
August 30, 1904, printing circular letters.....	2 25
December 20, 1904, printing programs.....	1 30
December 27, 1904, receipt book.....	25
Postage stamps for 1904.....	10 40
January 5, 1905, dues to National Association.....	3 00
	<hr/>
Total.....	\$145 15
Leaving a balance on hand of.....	35 94

Respectfully submitted,

H. L. NOWLIN, Secretary.

On motion the report was referred to the Auditing Committee.

Mr. Kelsey, for the Auditing Committee, reported that the committee had found Mr. Nowlin's accounts correct.

Mr. Dilling, for the Committee on Resolutions, presented the following, which were adopted as read:

Your Committee on Resolutions begs leave to submit the following report:

First. Be it resolved, That we further appreciate the untiring efforts of our worthy president, Hon. Aaron Jones, by whose influence and assistance our organization was effected and brought to its present state of usefulness, and we hereby express our sincere hope that he may meet with success in the great work in which he is engaged for the betterment of his fellow-man; and we also appreciate his annual greatly.

Second. Be it resolved, That we further extend to our efficient secretary, Mr. H. L. Nowlin, our hearty approval of his efficient work and the untiring zeal which he has shown in the discharge of his official duties.

Third. Be it resolved, That we try to get the reports of our meeting published in the agricultural reports of Indiana.

Fourth. Be it resolved, That we earnestly urge that our Legislative Committee be ever watchful of the interests of the Mutual Insurance Companies of our State; and

We further earnestly solicit that every mutual company in the State join this Union.

Fifth. Be it resolved, That we appreciate and heartily thank President Forbes of the National Association for his instructive address before this convention; and, be it further

Resolved, That in behalf of the Mutual Insurance Companies of the State of Indiana the thanks and highest appreciation of this convention be and is hereby extended to Professor Dodd, of Des Moines, Iowa, for his most interesting and instructive lecture demonstrating and illustrating the use of lightning rods before this convention.

WILLIAM WATLINGTON,
D. O. DILLING,
ENOCH DRUMM,
Committee.

The following officers were elected to serve for the ensuing year:

President—Aaron Jones, South Bend.

Vice-President—George V. Kell, Huntertown.

Secretary—H. L. Nowlin, Lawrenceburg.

Treasurer—J. L. Thomas, Pendleton.

The matter of printing the proceedings of the convention was left in the hands of Secretary Nowlin.

REPORTS OF COMPANIES.

THE FARMERS' MUTUAL FIRE INSURANCE COMPANY OF DEKALB COUNTY.

Organized 1878.

Policies in force January 28, 1905.....	2,417 for	\$3,525,000 00
Losses during year.....	30 for	7,965 45
Expense other than losses.....		521 32
One assessment made during year, 20 cents on each \$100....		6,730 21
Other sources of revenue, per centum of 10 cents on each \$100 of new insurance written during the year.....		432 88
Losses caused by fire.....		12
Losses caused by lightning.....		18
Losses with shingle roof.....		18

One with slate roof.

L. W. Treesh, President, Corunna.

Philip S. Carper, Secretary, Auburn.

FARMERS' CO-OPERATIVE INSURANCE ASSOCIATION OF HEN-
DRICKS COUNTY.

Policies in force January 1, 1905.....	2,932 for	\$4,116,165 00
Losses during year.....		7,977 96
One assessment made during year for.....		9,161 57

George W. Scearce, President, Danville.
Simon T. Hadley, Secretary, Danville.

FARMERS' MUTUAL AID ASSOCIATION OF WARRICK, VANDER-
BURGH AND GIBSON COUNTIES.

Reorganized December 25, 1901.

Policies in force January 1, 1905.....	870 for	\$1,434,000 00
Losses during year.....	13 for	1,884 76
Expense other than losses.....		110 50
Total expense		1,995 26
One assessment made during year for.....		1,340 36
Appraisement fees, conscience fund and delinquencies.....		361 12
Losses caused by fire.....		7
Losses caused by lightning.....		6
Losses with shingle roof.....		All
Losses with metal roof.....		None
Losses where building was rodded.....		None

W. H. Norcross, President, Elberfeld.
David Hurbner, Secretary, McCutcheonville.

THE GERMAN BAPTIST OF WAYNE, UNION AND FAYETTE
COUNTIES.

Policies in force January 1, 1905.....	2,700 for	\$3,685,000 00
Losses during year.....	30 for	5,578 92
Expense other than losses.....		873 26
Total expense		6,452 18
One assessment made during year of 20 cents on the hundred		6,157 86
Losses caused by fire.....		15
Losses caused by lightning.....		5
Losses where building was rodded.....		None

Daniel Fiant, President, Connersville.
D. O. Dilling, Secretary, Hagerstown.

JEFFERSON COUNTY PATRONS' MUTUAL FIRE INSURANCE
COMPANY.

Organized February 1, 1877.

Policies in force August 1, 1904.....	1,758	for \$1,431,213	00
Losses during year.....	15	for	1,821 89
Expense other than losses.....			824 02
Total expense			2,645 91
Assessments made during year, 10 cents on \$100.....			1,418 17
Other sources of revenue, annual per cent. 10 cents on \$100.			1,077 42
Losses caused by fire.....			8
Losses caused by lightning.....			12
Losses where building was rodded.....			None

D. P. Monroe, President, R. No. 1, Hanover.

William Watlington, Secretary, Madison.

FARMERS' MUTUAL FIRE INSURANCE COMPANY OF GREENE
COUNTY.

Organized December, 1897.

Policies in force October 1, 1904.....	845	for \$722,545	00
Losses during year.....	16	for	1,485 65
Expense other than losses.....			160,95
Total expense			1,646 60
One assessment made during year for.....			1,485 65
Other sources of revenue, incidental or contingent.....			352 72
Losses caused by fire.....			5
Losses caused by lightning.....			6
Losses with shingle roof.....			8
Losses with metal roof.....			None

James H. Kirby, President, Worthington.

Charles Breck, Secretary, Linton, R. No. 1.

LAWRENCE TOWNSHIP FARMERS' MUTUAL OF MARION
COUNTY.

Organized January, 1893.

Policies in force October 8, 1904.....	418	for \$635,905	00
Losses during year.....	11	for	1,530 55
Total expense			1,799 51
One assessment made during year for.....			1,211 76
Losses caused by fire.....			5
Losses caused by lightning.....			6

Asa S. Newhouse, President, Lawrence.

J. W. Apple, Secretary, Oaklandon.

HANCOCK COUNTY FARMERS' MUTUAL INSURANCE ASSOCIATION.

Organized 1876.

Policies in force October 1, 1904.....	1,523 for	\$1,258,896 00
Losses during year.....	42 for	4,010 00
Expenses other than losses.....		516 00
Two assessments made during year.....		4,010 00
Losses caused by fire.....		17
Losses caused by lightning.....		25
Losses with shingle roof.....		12
Losses with metal roof.....		None
Losses where building was rodded.....		One

William Elsbery, President, Greenfield.

B. L. Barrett, Secretary, Greenfield, R. R. No. 5.

THE FARMERS' MUTUAL INSURANCE COMPANY OF MONTGOMERY AND FOUNTAIN COUNTIES.

Organized September 11, 1877.

Policies in force August 30, 1904.....	2,174 for	\$3,205,377 00
Losses during year.....	42 for	8,976 72
Expenses other than losses.....		736 34
Total expense		9,713 06
One assessment made during year for.....		7,023 17
Other sources of revenue, premium and policy fees.....		1,171 82
Losses caused by fire.....		20
Losses caused by lightning.....		22

R. D. Drollings, President, Veedersburg.

W. J. Wiles, Secretary, New Market.

FARMERS' MUTUAL OF BARTHOLOMEW COUNTY.

Organized June 16, 1900.

Policies in force January 1, 1905.....	875 for	\$800,000 00
Losses during year.....	6 for	1,871 00
Expense other than losses.....		352 02
Total expense		2,223 02
Two assessments made during year for.....		1,855 00
Other sources of revenue, policy and premium fees.....		428 00
Losses caused by fire.....		3
Losses with shingle roof.....		3

D. W. Heagy, President, Columbus, R. F. D. 7.

C. G. Hunter, Secretary, Columbus, R. F. D. 10.

PATRONS' MUTUAL FIRE INSURANCE COMPANY OF DEARBORN
COUNTY.

Organized 1877.

Policies in force October 1, 1904.....	414 for	\$374,523 25
Losses during year.....	5 for	1,874 00
Expense other than losses.....		401 26
Total expense		2,275 26
Three assessments made during year for.....		2,167 56
Other sources of revenue, 20 cents on each \$100 new insur- ance, cancellation and transfer fees.....		201 09
Losses caused by fire.....		3
Losses caused by lightning.....		2
Losses with shingle roof.....		3
Losses with metal roof.....		None
Losses where building was rodded.....		None

M. F. Holman, President, Correct.

H. L. Nowlin, Secretary, Lawrenceburg.

PATRONS' MUTUAL AID SOCIETY.

Organized 1877.

Losses during year.....	3 for	\$1,100 00
Two assessments made during year for.....		900 00
Losses caused by fire.....		3
Losses with shingle roof.....		3

W. F. Kerns, President, Toronto.

Edwin Tiffany, Secretary, Toronto.

THE MUTUAL WINDSTORM AND CYCLONE INSURANCE
ASSOCIATION.

Organized September 12, 1899.

Policies in force December 31, 1904.....	412 for	\$492,050 00
Losses during year.....		None
Sources of revenue, for membership dues, balance on hand...		151 41

John Friday, President, R. R. No. 4, Evansville.

Herman Wortman, Secretary, Inglefield.

DELAWARE COUNTY FARMERS' MUTUAL INSURANCE COMPANY.

Organized January 5, 1895.

Policies in force October 15, 1904.....	760 for	\$872,107 00
Losses during year.....	3 for	1,512 00
Expense other than losses.....		373 76
Total expense		1,885 76
One assessment made during year for 25 cents on the hundred		1,704 36
Other sources of revenue, new members and balance.....		215 00
Losses caused by fire.....		4
Losses caused by lightning.....		3
Losses with shingle roof.....		4
Losses with metal roof.....		None
Losses where building was rodded.....		None

Enoch Drumm, President, Muncie, R. No. 2.

J. F. Shoemaker, Secretary, Muncie, R. No. 3.

FARMERS' MUTUAL FIRE INSURANCE ASSOCIATION OF ALLEN COUNTY.

Insurance written during year.....		\$622,990 00
Insurance canceled		324,411 00
Net insurance		298,578 00
Number of losses 30—		
Caused by lightning 13, amount.....		1,940 00
Caused by fire 17, amount.....		3,756 40
Receipts—		
From one assessment at 13 cents on each \$100...\$5,800 00		
From withdrawals		129 91
From new insurance, 10 cents on each \$100.....	622 99	\$6,552 90
Expenses—		
For losses	5,696 40	
All other expenses.....	818 21	\$6,514 61
Balance		\$ 38 29

George V. Kell, President, Huntertown.

W. A. Kelsey, Secretary, Ft. Wayne.

FARMERS' MUTUAL FIRE INSURANCE COMPANY OF SHELBY
AND JOHNSON COUNTIES.

Organized March 15, 1894.

Policies in force January 1, 1905.....	1,514 for	\$2,183,170 00
Losses during year.....	7 for	7,786 35
Expenses other than losses.....		250 47
Total expense		8,036 82
Four assessments made during year for.....		7,583 00
Other source of revenue.....		534 00
Losses caused by fire.....		23
Losses caused by lightning.....		5
Losses with shingle roof.....		28
Losses with metal roof.....		None
Losses where building was rodded.....		None

T. M. Jeffras, President, Shelbyville.

W. R. Clore, Secretary, Franklin.

FARMERS' MUTUAL INSURANCE ASSOCIATION OF BENTON,
JASPER AND WHITE COUNTIES.

Organized March 15, 1897.

Policies in force January 1, 1905.....		\$1,895,559 32
Losses during year.....		1,988 43
Expenses other than losses.....		2,365 20
One assessment made during year for.....		3,850 31
Other sources of revenue, premium on new insurance.....		307 80

W. H. Cheadle, President, Remington, Ind.

W. R. Pierce, Secretary, Remington, Ind.

THE FARMERS' MUTUAL OF MADISON COUNTY, INDIANA.

Organized October 31, 1885.

Policies in force January 7, 1905.....	1,424 for	\$2,091,240 00
Losses during year.....		6,811 18
Expense other than losses.....		1,092 20
Total expense		7,903 38
Two assessments made during year for		7,903 38
Losses caused by fire.....		25
Losses caused by lightning.....		15
Losses with shingle roof.....		27
Losses with metal roof.....		None
Losses where building was rodded.....		None

Joseph Saunders, President, Anderson, Ind.

R. A. Kirkman, Secretary, Pendleton, Ind.

FARMERS' INSURANCE ASSOCIATION OF HAMILTON COUNTY.

Organized August, 1876.

Policies in force January 1, 1905.....	2,957 for	\$3,945,855 00
Losses during year.....	59 for	7,666 86
Expense other than losses, including rewriting all insurance		1,496 50
Total expense		9,163 36
One assessment made during year of 20 cents on each \$100..		.....
Losses caused by fire.....		34
Losses caused by lightning.....		25
Losses with shingle roof, all but two, and they were slate.		
Losses where building was rodded.....		None

W. C. Bray, President, Noblesville, Ind.

HENRY COUNTY FARMERS' MUTUAL INSURANCE ASSOCIATION.

Organized August, 1895.

Policies in force October 15, 1904.....	1,350	
Losses during year.....	9 for	\$8,883 62
Expense other than losses.....		300 00
One assessment made during year, 20 cents on the \$100.....		3,156 45
Other sources of revenue, 94 new members.....		94 00
Losses caused by fire.....		8
Losses caused by lightning.....		6
Losses with shingle roof.....		2
Losses with metal roof.....		None

T. C. Phelps, President, New Castle.

J. O. Mendenhall, Secretary, New Castle.

THE GRANT COUNTY FARMERS' MUTUAL INSURANCE COMPANY.

Organized August 25, 1891.

Policies in force August 29, 1904.....	\$982,341 00
Losses during year.....	2,713 93
Expense other than losses.....	596 34
Total expense	3,310 27
Four assessments made during year, 32½ cents on each \$100.	
Total receipts from all sources.....	3,425 73
Losses caused by fire.....	7
Losses caused by lightning.....	4

T. M. Miller, President, Upland.

L. T. Hale, Secretary, Marion.

FARMERS' MUTUAL INSURANCE COMPANY OF NEWTON
COUNTY.

Organized February 23, 1898.

Policies in force December 15, 1904.....	363 for	\$454,965 00
Losses during year.....	9 for	1,047 41
Expense other than losses.....		231 40
Total expense		1,278 81
One assessment made during year for.....		400 00
Balance		924 20
Other sources of revenue, premium and policy fees.....		242 92
Losses caused by fire.....		2
Losses caused by lightning.....		3
Losses with shingle roof.....		3

W. P. Griggs, President, Brook.

J. R. Hershman, Secretary, Brook.

CLARK COUNTY FARMERS' MUTUAL FIRE INSURANCE
COMPANY.

Organized September 6, 1880.

Policies in force September 1, 1904.....	938 for	\$856,861 00
Losses during year.....	33 for	3,654 40
Expenses other than losses.....		871 29
Three assessments made during year for.....		3,771 39
Other sources of revenue, annual dues.....		754 30
Losses caused by fire.....		17
Losses caused by lightning.....		17
Losses with shingle roof.....		16
Losses with metal roof—some in part. None in full.		
Losses where building was rodged.....		None

George D. Jackson, President, Sellersburg, R. 2.

Robert C. Rueff, Secretary, Vienna, Route 1.

FARMERS' CO-PARTNERSHIP INSURANCE COMPANY OF FULTON,
WHITE AND PULASKI COUNTIES.

Organized May, 1894.

Policies in force October 11, 1904.....	908 for	\$1,065,086 00
Carried over losses, 1903.....	6 for	1,843 07
Losses during year.....	16 for	2,666 94
Expense other than losses.....		3,254 35
Total expense.....		7,765 29

One assessment made during year for.....	2,672	99
Other sources of revenue, loans, collection of general pre- miums	5,688	57
Losses caused by fire.....	8	
Losses caused by lightning.....	8	
Losses with shingle roof.....	6	
Losses with metal roof.....	None	
Losses where building was rodded.....	None	

W. A. McClung, President, Rochester.

E. C. Mercer, Secretary, Rochester.

PATRONS OF HUSBANDRY MUTUAL FIRE AND LIGHTNING IN-
SURANCE COMPANY OF DECATUR COUNTY.

Organized June 20, 1878.

Policies in force January 1, 1905.....	1,328	for	\$2,098,150	00
Losses during year.....	29	for	5,132	70
Expense other than losses.....			749	90
Total expense.....			5,882	60
One assessment made during year for.....			6,193	28
Other sources of revenue, surplus at beginning of year			\$947	09
Membership fees, etc.....	253	63	1,200	72
Losses caused by fire.....			20	
Losses caused by lightning.....			9	
Losses with shingle roof.....			8	
Losses with metal roof.....			None	
Losses where building was rodded.....			None	

W. R. Pleak, President, Greensburg.

S. W. Hillman, Secretary, Greensburg.

FARMERS' MUTUAL INSURANCE COMPANY OF MULBERRY.

Organized January 1, 1868.

Policies in force January 1, 1905.....	4,855	for	\$7,199,181	00
Losses during year.....	99	for	12,139	39
Expense other than losses.....			3,831	59
Total expenses			15,971	98
One assesment made during year for.....			15,241	92
Other sources of revenue, advance premium and office rent for holding election.....			2,970	01
Losses caused by fire.....			51	
Losses caused by lightning.....			48	
Losses where building was rodded.....			None	

James M. Bell, President, Frankfort.

D. F. Clark, Secretary, Mulberry.

GERMAN BAPTIST MUTUAL PROTECTIVE ASSOCIATION OF DELAWARE, HENRY AND RANDOLPH COUNTIES.

Organized October 1, 1895.

Policies in force January 1, 1905.....	2,741 for	\$2,835,147 00
Losses during year.....		4,051 15
Expenses other than losses.....		868 00
Total expense		4,919 15
One assessment made during year of 20 cents on each \$100..		.....
Losses caused by fire.....		13
Losses caused by lightning.....		23
Losses where building was rodged, none, except one, and that was disconnected 10 feet above the ground.		

Emmet Moore, President, Hagerstown.

L. J. Hooke, Secretary, Room 135, The Johnson, Muncie.

JENNINGS COUNTY FARMERS' FIRE ASSOCIATION.

Organized 1891.

Policies in force October 1, 1904.....	1,196 for	\$1,060,330 00
Losses during year.....	14 for	2,366 50
Expenses other than losses.....		541 47
Total expense		2,907 97
Two assessments made during year for.....		2,417 53
Other sources of revenue, membership fees during the year (153 members)		506 00
Losses caused by fire.....		6
Losses caused by lightning.....		10
Losses with shingle roof.....		13

J. G. Marsh, President, North Vernon.

John W. Davis, Secretary, North Vernon.

FARMERS' MUTUAL INSURANCE ASSOCIATION OF WHITLEY COUNTY.

Organized September 10, 1884.

Policies in force January 4, 1904.....		\$2,922,280 00
Losses during year.....		5,495 60
Assessments made during year.....		8,524 27
Other sources of revenue, 5 cents on each \$100 written and delinquents collected by agents.....		408 78
Losses caused by fire.....		16
Losses caused by lightning.....		19

I. J. Krider, President, Columbia City.

L. W. Dunfee, Secretary, Columbia City.

PROCEEDINGS

OF THE

Farmers' State Congress of Indiana.

Indianapolis, February 2-4, 1904.

HISTORICAL.

We have often been asked who originated the Farmers' National Congress and what has been its history. We know but little of its history prior to 1884.

The first printed proceedings were those of the fifth annual session, held at Indianapolis in 1885. Since then there has been kept a complete record of all the proceedings.

Commencing with only five members, the Congress has grown to be an important body, and its non-partisan position gives it great strength with legislative bodies. It has accomplished a grand work in presenting such measures as the agriculturists of the country need.

The meetings from 1885 were as follows: St. Paul, 1886; called meeting at Washington, D. C., 1887; regular meeting, Chicago, 1887; Topeka, Kan., 1888; Montgomery, Ala., 1889; Council Bluffs, Ia., 1890; Sedalia, Mo., 1891; Lincoln, Neb., 1892; Savannah, Ga., 1893; Parkersburg, W. Va., 1894; Atlanta, Ga., 1895; Indianapolis, Ind., 1896; Minneapolis, Minn., 1897; Dallas, Texas, 1898; Colorado Springs, Colo., 1899; Boston, Mass., 1900; Sioux Falls, S. D., 1901; Macon, Ga., 1902.

The place of meeting of the National Farmers' Congress in 1903 was Niagara Falls, N. Y., and began September 22, 1903, and continued four days.

In accordance with instructions of the meeting for preliminary arrangements for the organizing of a Farmers' Congress of Indiana, held in Indianapolis on January 8, 1903, Joshua Strange, chairman of that meeting, issued a call to the presidents of the County Farmers' Institutes and some others for a meeting to be held in Room 12 at the State House at 10 a. m. on February 3, 1903.

This meeting was called to order by Joshua Strange, of Grant County, chairman of the preliminary meeting, and in the absence of Secretary A. L. Heim, W. H. Newsom, of Bartholomew County, was chosen temporary secretary.

The session was devoted to discussion of matters of general interest in the field of agriculture, and especially the importance of completing the organization of the Farmers' Congress of Indiana to co-operate with the National Farmers' Congress.

Chairman Strange gave an excellent talk on the National Farmers' Congress and showed the very material benefit to be derived therefrom. He stated that, according to instructions of the previous preliminary meeting, he had written the chairmen of the county institutes and a number of supplementary institutes, to the total number of one hundred and twenty-four, and that all replies received were favorable to the movement of organization of the Congress, and the writers were in hearty support of the same. He also dwelt at length on the methods of organization and showed clearly that the congress should be open for all farmers who wish to become associated with it and be present at its meetings.

The meeting perfected a permanent organization by adopting a constitution and by-laws and the election of officers to serve for a term of two years.

Hon. Joshua Strange, of Marion, was elected President and W. H. Newsom, of Elizabethtown, was elected Secretary. The place of meeting for 1904 was fixed at Indianapolis, February 2-3-4.

LIST OF OFFICERS AND COMMITTEES.

President.....	Hon. Joshua Strange, Marion.
Vice-President.....	A. E. Swope, Evansville.
Secretary.....	W. H. Newsom, Elizabethtown.
Treasurer.....	Ellis House, Bicknell.

Executive Committee—Hon. Joshua Strange, Marion; W. H. Newsom, Elizabethtown; H. E. Lockry, Franklin; J. D. Bray, Noblesville; D. F. Maish, Frankfort.

Legislative Committee—Hon. Leroy Templeton, Indianapolis; Hon. Aaron Jones, South Bend; Mr. D. F. Maish, Frankfort; Mr. Ellis House, Bicknell; Hon. Joshua Strange, Marion; Mr. W. H. Newsom, Elizabethtown.

Railroad Committee—Hon. Joshua Strange, Marion; Hon. Leroy Templeton, Indianapolis; Mr. Wilson Corey, Anderson.

CONSTITUTION.

Section 1. This organization shall be known as the Farmers' State Congress of Indiana, and its object shall be to advance the agricultural interests of the State.

Sec. 2. This Congress shall be composed of one delegate from each county, one delegate from each congressional district and two delegates from the State at large, the district and State at large delegates being the regular credentialed delegates to the National Farmers' Congress; one delegate from the State Horticultural Society, one delegate from the Department of State Forestry and one delegate from the Purdue School of Agriculture.

Sec. 3. The officers of this organization shall consist of a President, Vice-President, a Secretary and a Treasurer, who shall serve for a term of two years, and shall be elected viva voce or by ballot, as the Congress may decide.

Sec. 4. It shall be the duty of the President to preside at all meetings of the Congress, to communicate with them in regard to the objects in view and advise with the other officials of the organization, so as to assist them in their duties.

Sec. 5. It shall be the duty of the Vice-President to assume all the duties of the President in case of his absence or inability to preside.

Sec. 6. The Secretary shall keep a complete record of all the proceedings of the Congress, keep all papers belonging to same and furnish copies when requested to do so by the President.

Sec. 7. The Treasurer shall take charge of all monies paid to him, keep a true and perfect account of the same, and pay out only on orders by the President, countersigned by the Secretary.

Sec. 8. The chairman of each County Farmers' Institute of the State shall be the regular delegate to represent his county. Each County and Supplementary Institute is requested to select in open session one or more "associate" delegates. Each county shall be entitled to only one vote, except the district vote. If any regular delegate is unable to attend he shall appoint his own alternate, who shall have all the rights and privileges of the regular delegate. Any farmer in the State may be an associate delegate with all the privileges of the regular delegate, excepting the right of voting.

Sec. 9. The annual dues to this Congress shall be one dollar for each regular delegate.

Sec. 10. This Congress of Farmers shall assemble annually upon the first Tuesday in February, and in special sessions upon call of the Executive Committee, and the Congress shall in open session determine the place for holding the annual meeting.

Sec. 11. A majority of the delegates present shall constitute a quorum.

Sec. 12. This constitution may be amended upon one year's notice.

BY-LAWS.

Article 1. The President, or, in his absence, the next highest officer present, will take the chair at the hour set for the convening of the Congress or the hour to which it may have adjourned, and promptly call the same to order and cause the journal of the preceding day to be read.

Art. 2. He shall preserve order and decorum and shall speak to points of order in preference to delegates, and shall decide questions of order, subject to appeal of any two members.

Art. 3. All committees shall consist of five members and be appointed by the presiding officer, unless the Congress shall direct otherwise, excepting the Committee on Resolutions, which shall consist of one from each district represented and be named by the district delegation upon call of the roll of districts. The President and Secretary, by virtue of their office, shall be members of the Executive Committee.

Art. 4. A call of the roll by districts and State shall be ordered in the determination of any question upon the demand of five delegates. No delegate shall be excused from voting except by consent of the Congress.

Art. 5. Before being presented, all resolutions, petitions, memorials and all other papers shall be reduced to writing, signed by the delegate presenting the same, together with the name of his county and his post-office address. Said papers to be read by title only, and referred to its appropriate committee without debate, unless otherwise ordered by the Congress.

Art. 6. The journal being read, the following order shall govern:

- a. Introduction of resolutions, petitions, memorials and other papers.
- b. Reports of committees appointed at last session.
- c. Reports of special committees.
- d. Miscellaneous business.
- e. Addresses and literary papers.

Art. 7. Unless otherwise ordered, the Committee on Resolutions shall submit its final report on the third day of the session at 10 a. m. .

Art. 8. The rules of parliamentary practice contained in Cushing's Manual shall govern the Congress in all cases not provided for in these rules.

LIST OF DELEGATES.

- A. G. Mace, Lexington.
 W. P. Bottorff, Utica.
 Lewis DeVilbiss, Bloomington.
 T. G. Day, Correct.
 R. H. Wood, Madison.
 *Thos. Thornburg, Dublin.
 John P. Porter, Vevay.
 P. B. Ewan, Hayden.
 David A. Jordan, Corydon.
 *Lewis Copeland, Warrington.
 Eli B. Hemmer, Holland.
 J. D. Selby, Petersburg.
 D. W. Sherwood, Bryantsville.
 *W. H. Ackenbach, Tipton.
 *Joshua Strange, Marion.
 Geo. Harrell, Duncan.
 *J. G. Kingsbury, Indianapolis
 J. B. Kirby, Bloomington.
 Samuel Sholty, Wabash.
 *A. J. Thomas, Gas City.
 T. W. Logan, Westchester.
 C. N. Libbey, Lagrange.
 Harry Stoops, Brookville.
 *Thos. S. East, Anderson.
 Richard Taylor, Farmersburg.
 J. J. Wheeler, Rome.
 Austin Porter, Loogootee.
 *B. F. Johnson, Indianapolis.
 *Ellis House, Bicknell.
 Chas. Yaw, Pimento.
 *Dexter Thornburg, Dublin.
 C. C. Dawson, Grand View.
 Walter Goldsmith, Evansville.
 Ed. Bartholomew, Millersburg.
 *J. W. Goodman, Linton.
 Jno. H. Jenkins, Magnolia.
 *J. G. Perry, Columbus.
 John F. Bond, Nashville.
 W. E. Springer, Elizabethtown.
 *Strod Hays, Sulphur Springs.
 B. F. Gaston, Sardinia.
 Oscar Hardman, Orleans.
 E. L. Daggy, Spencer.
- *Leroy Templeton, Indianapolis.
 F. J. Heacock, Canton.
 Geo. V. Kell, Huntertown.
 *C. B. Benjamin, LeRoy.
 C. D. Kunkle, Monmouth.
 Geo. Smith, Guilford.
 Grant Williams, Connersville.
 *Oliver Thornburg, Dublin.
 C. C. Ferguson, Boonville.
 P. McHenry, Washington.
 J. M. Schermerhorn, Brimfield.
 J. D. Bray, Noblesville.
 *A. G. Burkhardt, Tipton.
 J. F. Robinson, Dana.
 Smith Remster, Veedersburg.
 *W. H. Newsom, Elizabethtown.
 M. L. Hans, Rising Sun.
 *W. H. Stearn, Indianapolis.
 W. H. Reed, Brook.
 Fred Garing, North Judson.
 J. E. Green, Hartford City.
 J. D. Wiley, New Harmony.
 *O. J. Avery, Indianapolis.
 Vard Finnell, Maxwell.
 A. A. Bruner, Marion.
 *W. R. Wycoff, Southport.
 J. F. Stark, Lebanon.
 John Ingles, Hemlock.
 *H. E. Lockry, Franklin.
 *W. Ray Collins, Linton.
 J. J. Thomas, Rockville.
 J. W. Brummitt, Valparaiso.
 *D. F. Maish, Frankfort.
 *H. L. Nowlin, Lawrenceburg.
 Egbert Gawthrop, Milford.
 H. W. Henry, LaPorte.
 I. J. Farquhar, Modoc.
 *W. H. Freeman, Indianapolis.
 Oliver Kline, Huntington.
 Wm. Beck, Crawfordsville.
 O. L. Coyle, Shelbyville.
 *S. L. Wright, Paris Crossing.
 J. H. Howorth, Oxford.

- R. L. Kennedy, Center Point.
 A. W. Shoemaker, Daleville.
 J. E. Dilgard, Waterloo.
 *Wilson Corey, Anderson.
 Wm. Steelman, Hazelton.
 O. A. Stubbs, Lewisville.
 *I. M. Miller, Upland.
 Matthew Park, Bluffton.
 M. V. Unger, Middlefork.
 *H. P. Burnside, Covington.
 B. F. Nash, Peru.
 L. A. Stockwell, Cloverdale.
 *C. C. Williams, Pendleton.
 B. W. Ross, Teegarden.
 *I. N. Cotton, Indianapolis.
 J. H. Bone, Shadeland.
 G. Kaufman, Montgomery.
 Milton Beyers, Burney.
 S. L. Webster, Newville.
 Wilson Eikenberry, Bringham.
 F. A. Metzger, Granger.
 Jno. Macey, Hagerstown.
 Jno. Harpham, Pleasant Lake.
 *Inman H. Fowler, Spencer.
 W. L. Brown, Rushville.
 W. S. Peter, Monticello.
 E. H. Hixon, Crown Point.
 *Solon L. Goode, Indianapolis.
 J. W. Luckey, Seymour.
 W. B. Flick, Lawrence.
 J. P. Martin, Logansport.
 N. F. Watson, Columbia City.
 N. W. Slater, Marshfield.
 T. C. Burnside, Liberty.
 M. I. Adams, Rensselaer.
 N. A. McClung, Rochester.
 Walter Swain, Pendleton.
 O. P. Macy, Mooresville.
 C. L. Bader, Pulaski.
 Will Ryan, Tipton.
 *J. H. H. Lovett, Linton.
 Wallace Miller, Colfax.
 W. H. Miller, Mulberry.
 W. J. Becket, Aurora.
 Watt Wilson, Muncie.
 J. L. Powell, Huntingburg.
 J. J. Huffman, Nappanee (No. 5).
 J. E. Crandall, Connersville.
 Thos. Shutts, Newton.
 Wm. Chapell, Oakland City.
 A. J. Spore, Owensville.
 J. S. Floid, Bloomfield.
 Geo. Sage, Linton.
 Wm. Holmes, Carmel.
 R. R. Higgins, Willows.
 F. O. Jordan, Corydon.
 W. C. Hadley, Danville.
 Wm. Curby, Kokomo.
 F. L. Studebaker, Warren.
 E. C. Keller, Brownstown.
 B. R. Lett, Crothersville.
 W. C. Williams, Bryant.
 S. R. Claycord, Portland.
 John Peterson, Biggor.
 Geo. McCaslin, Trafalgar.
 Frank Elliott, Vincennes.
 E. N. Long, Etna Green.
 J. K. Bronson, Manilla.
 W. R. Shearer, Myhart.
 J. W. Dunlap, Scottsburg.
 L. Dunning, Knox.
 N. S. Parker, Shelbyville.
 W. J. Gabbert, Newtonville.
 Chas. Sharp, Alvarado.
 E. Manlove, Tipton.
 J. West, New Lebanon.
 R. M. Hanner, Lafayette.
 G. A. Harlow, Groomsville.
 Wm. Young, Armstrong.
 L. Martin, Dana.
 Chas. Whitcomb, Terre Haute.
 S. M. Lutz, Wabash.
 A. Copeland, Bryantsburg.
 J. F. Craig, Madison.
 H. E. Watson, Edinburg.
 E. S. Cox, Biaknell.
 Jno. Gradner, Warsaw.
 N. D. Yoder, Lagrange.
 Aaron Jones, South Bend.
 J. E. Harron, Scottsburg (No. 1).
 Philip Six, Gwynneville.
 Jasper Heck, Waldron.

- S. Y. Johnson, Dale.
 I. N. Cox, Sharpsville.
 S. W. Exline, Dugger.
 C. J. Whisler, Lafayette.
 W. P. Hollingsworth, Shadeland.
 E. W. Allen, Sharpsville.
 Jno. Park, Inglefield.
 J. E. Ellis, Quaker.
 Bruce Whitesel, Libertyville.
 Link Lukens, Disko.
 Wm. Hart, Lafountain.
 Chas. Riggs, Carbondale.
 R. R. Shank, Salem.
 W. H. Hawkins, Arlington.
 J. Brown, Isom.
 J. E. Harkley, Keystone.
 O. V. Lehman, South Whiteley.
 T. E. Adams, Columbia City.
 A. A. Burrier, Marion.
 Allen Moore, Bedford.
 E. Travis, Kingsbury.
 M. L. Hersong, Alliance.
 Geo. Kirk, Anderson.
 N. R. Keesling, Mechanicsburg.
 A. W. Dolph, Teegarden.
 C. C. Poindexter, Burns City.
 Robert Ridgeway, Amboy.
 Chas. Ramsey, Santa Fe.
 W. A. Young, Bloomington.
 Milbert Sayler, Newmarket.
 Ethan Kendall, Mooresville.
 Jas. Little, Kentland.
 Jas. Worth, North.
 Jno. Lindley, Sr., Paoli.
 Wm. Welch, Annapolis.
 Jas. Brock, Montezuma.
 H. Goodwine, Walnut Grove.
 B. F. Martin, Claysville.
 Nathan Hall, Fountain City.
 Wm. Hatton, Milton.
 G. W. Huffman, Bluffton.
 Fred Perry, Burnetts Creek.
 B. F. Billiter, Huntington.
 H. E. Loomis, Union Mills.
 D. L. Dawson, Broad Ripple.
 J. B. Hilligoss, Florida.
 Leroy Staley, Plymouth.
 J. F. Hoover, Argos.
 N. D. Clifton, Shoals.
 W. L. Lucas, Bennettsville.
 J. A. Beever, Elliottsville.
 J. T. Stover, Crawfordsville.
 T. C. Campbell, Darlington.
 H. M. Smith, Hall.
 J. A. Burton, Orleans.
 W. V. Peden, Spencer.
 T. J. Lindley, Noblesville.
 J. H. Bone, Shadeland.
 E. L. Furness, Furnessville.
 W. H. Goodwine, West Lebanon.
 Robert Mitchel, Princeton.
 A. W. Tindall, Shelbyville.
 J. V. Nidlinger, Decatur.
 J. L. Aspy, Geneva.
 Wm. Johnson, Ft. Wayne.
 F. Poirson, Wallen.
 D. W. Heagy, Columbus.
 E. B. Barnett, Forest.
 W. W. Rose, Roseville.
 J. S. Workman, Alfordsville.
 A. S. Gilmore, Greensburg.
 G. H. H. Schwalter, Butler.
 O. T. Stephens, Moores Hill.
 J. R. Koons, Selma.
 J. W. Grant, Birds Eye.
 Harman Prough, Goshen.
 J. Dehaven, Connersville.
 Wm. Moore, Andersonville.
 Jas. Sample, Metamora.
 E. J. Seal, Fairmount.
 Jerry Hartley, Fairmount.
 L. A. Arbuckle, Hope.
 J. H. McDaniel, Boswell.
 J. D. Hollingsworth, Fowler.
 R. R. Gadbury, Hartford City.
 D. G. Green, Hartford City.
 T. D. Campbell, Needmore.
 J. S. Barnes, Nashville.
 Elvin Barker, Thorntown.
 Wallace Cox, Lebanon.

W. Wright, Deer Creek.	H. H. Hawkins, Petersburg.
Henry Snyder, Ockley.	Jas. Gwaltney, Poseyville.
Geo. W. Harness, Galveston (No. 3).	J. H. Williams, Cynthiana.
W. R. Hiatt, Galveston.	L. D. Allen, Monterey.
J. D. Kigor, Charleston.	I. N. Watts, Winamac.
Phil. Ellsworth, Nabb.	Lafe McKee, Bainbridge.
W. R. Risher, Brazil.	F. B. Hartman, Roachdale.
L. T. Butt, Center Point.	J. W. Bradrick, Farmland.
C. C. Bickwine, Noblesville.	L. L. Morman, Winchester.
Hiram Dunham, McCordsville.	J. H. Furnas, Lynn.
Harvey Barrow, Moberly.	Fred Baar, Ashton.
Chas. McLain, Danville.	Fred Leland, Morris.
N. B. Shaffer, Newcastle.	J. T. Scott, Raleigh.
Elmer Shrader, Greentown.	J. P. Dinford, Carthage.
L. C. Hoss, Kokomo.	H. F. McMahan, Liberty.
J. O. Miller, Huntington.	D. B. Johnson, Mooresville.
J. A. Williams, Rensselaer.	E. M. C. Habb, Salem.
E. Allen, Wheatfield.	H. E. Lockrey, Franklin.
Capt. Jno. Welch, Martinsville.	J. N. Babcock, Topeka.
G. M. Shaffer, Kendallville.	Geo. B. Kell, Ft. Wayne.
D. F. Kitts, Marion.	Wm. Blackstock, Lafayette.
Arthur Ibean, Brook.	L. A. Stockwell, Cloverdale.
Wm. Handley, Bloomingdale.	Geo. Hall, Rushville.
T. J. Coleman, Algiers.	Harry B. Flesher, West Lebanon.

*Note—By unanimous consent, delegates were recognized in accordance with the conditions of the proposed amendments to the constitution, which are offered for action at next annual session.

FIRST DAY.

The second annual session of the Farmers' State Congress of Indiana was called to order February 2, 1904, by President Joshua Strange, in Room 12, State House, at Indianapolis.

After some preliminary remarks by the President as to the work accomplished by the Farmers' National Congress and the association of this body with the National organization, the following Committee on Credentials was appointed: D. F. Maish, C. C. Williams, Oliver Thornberg, Strod Hays and I. N. Cotton.

Hon. John W. Holtzman, Mayor of the City of Indianapolis, was then introduced and extended a most hearty welcome to the Congress to the City of Indianapolis. (See address of welcome.)

The Mayor's welcome was responded to by D. F. Maish, of Frankfort.

The President's annual address was then delivered by President Strange. (See annual address.)

The address was referred to the following committee: Wilson Corey, Anderson, Ind.; Ellis House, Bicknell, Ind., and I. N. Cotton, Indianapolis, Ind.

Hon. W. S. Blatchley then gave a most splendid and able address on the subject, "The Utility of Convict Labor in Making Road Material." (See papers.)

This paper was fully discussed by W. S. Corey, D. F. Maish, S. L. Wright, J. H. H. Lovett and Ellis House, all of whom heartily agreed with Mr. Blatchley's views on the subject, and during the whole of the discussion a manifest disposition was shown to ask something at the hands of the next Legislature along the lines indicated by Mr. Blatchley's paper.

By unanimous consent the Committee on Resolution consisted of five members, appointed by the President, as follows:

Ellis House, I. M. Miller, C. C. Williams, S. L. Wright, Wilson Corey.

All resolutions to be submitted by title only and referred to the committee without discussion.

Hon. J. A. Mitchell, of Noblesville, then addressed the Congress further on the broad subject of "Good Roads, Building and Maintaining." (See papers.)

The discussion of this subject was very general, and it was conceded by all that it would be better for Congress to use more money to the advancement of good roads and less on the smaller streams which are of no practical value as waterways, even after the expenditure of large amounts of money on them. It was held by Mr. Williams that a bureau should be maintained for the purpose of extensively experimenting to learn absolutely the best form of road, and when learned should be carried out systematically.

Mr. Mitchell called attention to the lack of interest manifested by farmers in regard to matters of legislation generally, and said that there were many times when the honest representative would be more than glad to have the opportunity for consultation with and the advice of the progressive agriculturist. He said that the farmers could have a great influence in the enactment of just and wholesome laws if they would get together and properly present their views before the legislators.

This subject was discussed by many others, including J. G. Kingsbury, of the Indiana Farmer, who said that the whole farm press was always glad to give publication to the views of progressive farmers on any subject pertaining to their needs or advancement.

After some further remarks by President Strange concerning the good of the Congress and its connection with the National organization, the first day's session closed.

SECOND DAY.

The second day's session was called to order promptly at 9:30 a. m.

The journal of the first day's session was read and approved as read.

A letter from Hon. John M. Stahl was received and read, saying that, on account of sickness of his wife, it would be impossible for him to attend these meetings. He assured the Congress that it was a keen disappointment to him and that it was the first time that his name had ever been placed upon a program with his consent that he was not able to attend.

Hon. W. H. Freeman, secretary of the Indiana State Board of Forestry, was introduced and made a thorough and comprehensive talk on the subject of Forestry. (See paper.) Mr. Freeman's address was very generally discussed, it being held that land planted in forest trees of the quick growth kind would produce as great or greater income in twenty or more years' time than it would have done if cultivated in farm crops and the expense of the tillage deducted, and especially was this view held as applying to the cheaper and poorer crop-producing lands.

It was also brought out that by judicious planting of a very small area that each farm would produce its own fence posts and building material, at a handsome saving over buying them at prices which must prevail in the very near future.

Hon. L. Ert Slack, State Representative from Johnson County, delivered an address on Public Drainage (see paper), which was very ably discussed by Messrs. Lockry, Maish, Corey, Hays, Burkhart, Goode, Hon. Leroy Templeton and others.

The afternoon session was called at 1:30 p. m.

Hon. W. H. Goodwine not being present, the subject of Our Markets was spoken on by Mr. A. G. Burkhart, who handled the whole subject in a most comprehensive and thorough way. It was evident from Mr. Burkhart's speech that he had thoroughly considered the subject and spoke from things he knew to be true. (It is a matter of much regret to the Secretary that he is unable to embody this speech in this annual report.) The question was discussed at length by many present, and especially by Mr. Templeton, who showed the methods used in the live stock markets for controlling prices and compelling feeders and shippers to sell to the market the buyer chooses to have him.

Mr. Templeton spoke from his own actual experience and showed a condition existing in the manipulation of the live stock markets which

must necessarily be remedied before the feeder and shipper can secure fair play and a just and equitable price for his stock, instead of an arbitrary one set by a combination of buyers.

Hon. W. W. Stevens, World's Fair Commissioner for Indiana, spoke on the subject of Indiana at the St. Louis Exposition. (See paper.) He says Indiana has a most excellent building on the grounds, and it is arranged solely with the view to making a place for headquarters and a home for Indiana people when at the fair.

It was moved and properly seconded that the following be formed into a resolution:

"That it is the sense of this Congress that each county of the State should set aside an amount of money sufficient to assist in making a creditable showing at the St. Louis Exposition." Motion was carried.

THIRD DAY.

The journal of the second day's session was read and approved.

The financial report of the Secretary was read, including all receipts and expenditures to date of February 3, which showed a deficiency of fifteen dollars and thirteen cents (\$15.13).

By motion of Ellis House the rules were suspended and the following resolution was placed upon its passage (see Resolution No. 3).

Hon. J. A. Everitt, president of the American Society of Equity, was present and gave a splendid talk on the subject of obtaining profitable prices for farmers' products by the farmer setting the price, instead of letting the other fellow name it. (See paper.)

Mr. Everitt showed that he thoroughly understood the subject of handling prices from the farmer's side of the question, and was prepared to meet and did meet any and all questions or objections that were offered during the general discussion that followed. This speech was one that comes home to the farmer in a very material way and one which greatly affects the farmer's income. Mr. Everitt's plant is well worth the consideration of all farmers who wish to better the condition of their calling.

Mr. Nowlin, of Lawrenceburg, secretary of the Farmers' Mutual Insurance Union of Indiana, gave a talk on the subject of Mutual Insurance. (See paper.)

The committee to whom was referred the President's annual address reported and recommended that the address be published in full. Report approved. (See report of Committee on President's Address.)

President Strange then appointed the following: Hon. Leroy Templeton, of Indianapolis; Hon. Aaron Jones, South Bend; D. F. Maish, Frankfort; A. G. Burkhart, Tipton, and Ellis House, Bicknell, who, together with the President and Secretary of this Congress, shall constitute a Legislative Committee.

The Committee on Resolutions offered its report, which was accepted, and the resolutions offered were adopted. (See report of Committee on Resolutions.)

By motion, Mr. Strange, Mr. Templeton and Mr. Corey are to act as Railroad Committee, and endeavor to secure railroad rates for our next meeting.

The following amendments to the Constitution were read and submitted for action at the next annual session. (See amendments.)

By motion, the nominations for delegates to be appointed to next National Farmers' Congress was left with Mr. Strange.

The Congress adjourned to meet the first Tuesday in February, 1905, in Room 12, State House, Indianapolis, Ind.

REPORT OF COMMITTEE ON RESOLUTIONS.

To the State Farmers' Congress of Indiana:

We, the Committee on Resolutions appointed by the President, in accordance with unanimous consent of the Congress, beg to submit the following report on resolutions:

Nos. 1 to 11, inclusive, to be adopted.

Respectfully submitted and adoption moved by

C. C. WILLIAMS,
ELLIS HOUSE,
WILSON CORY.

Committee.

Resolution No. 1. Resolved, That the most excellent suggestions of Hon. W. S. Blatchley concerning the employment of convict labor for the purpose of making good road material, so restricted as not to compete with free labor, are hereby approved and the same recommended to the Legislative Committee of this Congress; and, further, that these recommendations be referred to the above committee as applicable to county prisoners as well as State.

Resolution No. 2. Resolved, That the State Farmers' Congress invite the "Good Roads" advocates and members of "Good Roads National Congress" to become members and a part of this Congress.

Resolution No. 3. Resolved, That it is the sense of this Congress that there be appointed by the President a Legislative Committee of five members, who, together with the President and Secretary of this Congress, shall look after legislative matters either directly or indirectly affecting the agricultural interests of the State.

Resolution No. 4. Resolved, That each county of the State should and that they be asked by this Congress to appropriate a sufficient amount of money to assist in making a creditable showing at the St. Louis Exposition.

Resolution No. 5. Resolved, That it is the sense of this Farmers' Congress of Indiana that we ask our representatives in Congress to use due care in making appropriations for the improvement of such rivers as are of little value to the State in a commercial way as carriers of commerce.

Resolution No. 6. Resolved, That we recommend to the favorable action of the Indiana delegation in Congress the good roads bill of Representative Brownlow, or some other bill of equal merit.

Resolution No. 7. Resolved, That this Congress recommend to its Legislative Committee to exert its influence in matters that will continue to foster the Farmers' Mutual Insurance Companies.

Resolution No. 8. Resolved, That the Legislative Committee of this Congress be instructed to propose and forward a measure providing for town or city mutual insurance companies.

Resolution No. 9. Resolved, That it is the sense of this Congress that there be legislation providing for State united cyclone insurance companies, and that the same is hereby recommended to our Legislative Committee.

Resolution No. 10. Resolved, That the interests of the agricultural classes of Indiana in regard to laws enacted concerning interurban lines should be carefully guarded, and the attention of the Legislative Committee is directed especially to this.

Resolution No. 11. Resolved, That it is the sense of this Congress that our license law for the sale of intoxicating liquors should be so changed that the applicant for license to sell liquors shall secure the signatures of a majority of the voters in the township or ward to a petition stating that the petitioners desire a saloon in their midst and that the applicant is a fit and proper person to conduct it.

ANNUAL ADDRESS.

JOSHUA STRANGE, PRESIDENT.

Members of the Congress—This being the first annual meeting of this Congress, and having but one year of existence as a new organization in this State, the organizers feel proud of the general interest manifested in the timely organization of this Congress, with its broad principles, for the promotion and welfare of the agricultural interests of our State.

This organization is political, but non-partisan. The functions of this Congress are to extend our resources, find new and better markets, raise our voices in behalf of wholesome legislation in behalf of the chief in-

dustry of our State and country. Great strides have been made along the lines of production, but little has been said on the great question of distribution. In the midst of plenty are paupers and hungry people, yet the missionary raises his voice for the Hindoo and the Chinaman. Over-production and under-consumption don't exist, nor ever did if the producer and consumer can be brought together; hence the question of distribution.

Our insular possessions open another market for the American farmer; how are they going to affect our markets? The results of the war with Spain added to our territory 125,000 square miles and ten millions of people. This, added to our late acquisition of the Hawaiian Islands, makes our insular possessions over 130,000 square miles, and adds more than ten million to our population. Before many years this will be increased, perhaps, by 50,000 square miles of Cuba and one and a half millions of her population. The problem of the development of this vast extent of fertile tropical territory, when taken hold of by American brain, brawn and energy, is unsolved, yet the farmers of the States may and should apprehend some changes.

Alaska, being purchased at \$7,200,000 sixteen years ago, was derisively referred to as a valueless frozen country, but its returns have been \$150,000,000 in furs, fish and gold. And, in return, it takes annually \$10,000,000 of our farm products and merchandise, which benefits every laborer and farmer in our country.

Porto Rico has added wonderfully to her annual aggregate, in sugar, cotton and tobacco, under American rule.

The American people are an intensely practical people. They are enthusiastic, progressive, and wherever they raise the stars and stripes it never, never trails the dust.

Under its beneficent protection individual opportunities are insured.

The promoters of extortionate and speculative trusts do not develop the resources of a country, but hinder and restrict the development. They appropriate the wealth that others create, and by concentrating it in the hands of the few, they check production by limiting opportunities and are, therefore, injurious to general prosperity. Get-rich-quick trusts, fraudulent trusts, that great tribe of public robbers, are not confounded with the honest men whose superior ability, industry and integrity have brought them legitimate wealth.

They confer no benefits on the community. Their money is fraudulently obtained, and the laws should hold them as public criminals.

Secretary Wilson reviews at length the production and exports of American agricultural products. The increase in the exports of farm products for the half century ended 1901 was from \$147,000,000 to \$952,000,000—550 per cent. The exports of farm products for the closing decade of the last century was over \$700,000,000, and for 1903 over \$878,000,000, an amount second only to that of 1901.

Discussing the balances of trade, the Secretary shows that the favorable balance to the credit of this country is due entirely to the farmers. The balance of trade in favor of farm products during the last fourteen years, no year excepted, aggregated \$4,806,000,000. In products other than those of the farm, during the same period the balance of trade was adverse to this country to the extent of \$865,000,000. Our farmers not only canceled this immense obligation, but placed \$3,940,000,000 to the credit of the nation when the books of international exchange were balanced.

There is one crop that the farmers have failed to supply our home market with, yet surrounded with favorable conditions. That is wool. In the last decade sheep husbandry has been on the decline in the United States. The latest estimates show about 39,000,000 sheep, showing a loss to the industry in the above named period of about 8,000,000. The cause is laid, sometimes, at the door of the politician. If such allegations were true, but little need have we with such that would frustrate an industry of so much good to the American farmer and of such vast importance to the welfare of our whole country. With our abundant resources for wool-growing, the balance of trade should not be against us in that one important commodity. Every farm in our State ought to have sheep on it. They are the only animal that responds so readily with their annual and semi-annual dues with so little attention.

The Grange.—The grange should receive endorsement and encouragement from this organization. Yet by some it may be said its "councils" are in secret conclave, but, notwithstanding, its influences for good and its achievements, educational, industrial and political, are self-evident as to its usefulness to the farmers of this country.

Its membership is composed of the best of the yeomanry of our nation, and its importance to agriculture is individual, collective and national. I do not address you as a member of this organization at this time, but from past experience as a member, and being in close touch with its movements during its entire existence, I know the truth of which I speak.

The great productive and distributive interests of the American farmer, perhaps, are nowhere better understood and more fully discussed and digested than they are behind the closed doors of the grange.

Farm labor has become a matter of vast importance to the farmers of our State. The drift of labor being to cities, towns and other industries—although with the advantages of improved machinery—the farmers find it a difficult task to get their crops harvested and threshed on account of short hours and apparent scarcity of labor.

The potential saving of labor by the use of implements, machinery and present-day methods over old-time usages amounts annually to a half billion dollars, in round numbers.

It seems the phenomenal progress made by producing more, seemingly at less cost, would result in giving large profits to the farmer, but when we look at the balance sheet we find in the expense account not so many laborers, but more per labor than by old-time methods, and to the potential account by machinery and operating it results with small profits to the farmer and an increased aggregate.

As a rule, the class of labor employed on the farm is not as good as formerly, and, in many places, the owner of the farm is almost obliged to operate it. Therefore, many times you see crops needing more and better cultivation, and unharvested when they should be, the farmer thereby incurring great loss.

As the labor question now confronts us most seriously in some parts of the State, it seems to me that the farmer could profitably meet and largely overcome this local (if such it is) labor trouble by growing more wool.

Legislation.—I would recommend that this Congress create a legislative committee, either authorizing the executive to act in that capacity or by creating a special committee, whose duty shall be to look after, during the session of the Legislature, all measures recommended by this Congress, as well as all measures that might affect our interests, either directly or indirectly, and to further the ends of justice.

Our road, criminal and convict labor laws might be revised, altered or changed so as to be of greater utility to the public road.

The condition of the public roads in the United States is probably worse than in any other civilized country. This condition is due to the undeveloped condition of the country, growing out of large landed estates and sparse settlement of the rural districts. But our State is mainly out of that condition, and the prevailing trouble that has been and is now is the lack of knowledge on the part of many of the road officials as to the primary principles of road construction, resulting in the injudicious use of thousands of dollars annually of the public money. Our country is now so developed that all road work should be done with a view of future improvement, and the law should take into account the qualification of the road officials, that the public funds would be judiciously expended.

The question of utilization of convict labor in road-making and making road material is now favorably discussed, and the public sentiment is largely favoring both propositions.

And I suggest that a law be passed that the State should purchase real estate and stone quarries at central points and suitable places where stone, tile and brick could be made into road material, and purchase land for agricultural purposes, and erect workhouses and stockades thereon, that all criminals convicted under the law of the State, in the lower as well as higher courts, shall work out fines and penalties at a per diem to the amount imposed upon them. Instead of supporting them in idle-

ness, teach them a trade that will be useful to them after serving their sentence. The State should take charge of all convicted for violating its laws. The counties should devise means of having every able-bodied prisoner performing some kind of labor during his confinement in jail, with compensation according to labor performed, the same to reimburse the parties injured, the counties, or, if needed, to the support of their families or a pittance to themselves.

In my opinion such a course pursued with criminals would soon show a radical reform in criminal annals.

The honest man has to earn his bread by the sweat of his brow, and, if the criminal would find he had to do the same, he would, by precept or example, soon learn that it would be much easier to do it as a free man than in chains.

Under the legal face of our statutes, according to the sheriffs' reports to the secretary of State Board of Charities and Corrections, there were 12,394 criminals made in the last year by "plain drunks." A disgrace to the fair name of our State. Legalizing crime! and then punishing the criminal. I do think, in all justice to humanity, that any business whose influences are baneful to society should be required to get the written consent of all persons domiciled within the bounds affected by such business over the age of sixteen years before such business could be licensed.

Our Government is founded upon the principles of majority rule. Our State recognizes woman's ability to be governess of the household affairs at the age of sixteen years. Therefore, I recommend that this Congress demand the "order" be changed, and instead of citizens being compelled to petition for the right to do right, that the other fellow must get consent of the citizens for the right to do wrong.

The Louisiana Purchase Exposition centennial, which comes off this year, should receive the united efforts of the farmers of this State to make our State occupy a place in that, the greatest of world fairs, that every Hoosier would be proud of and that will forever, as it were, erase that odium, "hayseed," from that class of people, that ancient people, whose calling was looked down upon and who had no standing or note or prominence; but show, by the fruits of our labor, the art of which a thousand and a half millions of people are supported, or depend upon for sustenance, and over two hundred million men expend their daily toil, that it is the parent art, and as a profession is the precursor of all professions. We owe this effort at this opportune time to our great State and to ourselves and posterity.

Every county in the State should make an appropriation sufficient to collect and prepare an exhibit in the most approved style, which would bring out fully the wonderful advancements of our State.

The men who compose this Congress represent the noblest calling on earth. Upon the farmer rests every other interest. If the farmer prospers, every other industry and interest prospers.

Indiana is a glorious State, glorious on account of the achievements of her sons.

First in education; first in reforms, and must be first at the St. Louis Exposition.

ADDRESS OF WELCOME.

JOHN W. HOLTZMAN, MAYOR.

Mr. President and Members of the Farmers' State Congress of Indiana—I feel honored in being permitted to extend to you a most cordial welcome to the greatest convention city of this country.

We are all justly proud of the Hoosier capital, because it is one of the most beautiful and progressive cities in the world, and last, but not least, because it is our capital city. The people of Indianapolis are proud of her citizenship and proud of the citizenship of our State, and they always stand ready to extend the glad hand of welcome to all those who honor us by coming within her gates.

You are to be congratulated upon the formation of this association. It shows the proper spirit and the proper desire to keep abreast of the times. It has only been in the last few years that the farmers of this country have made any general or concerted effort to improve their condition. I remember the time very well when we would go to town once a week to get our mail, and sometimes, when very busy, only once in two weeks, and unless some neighbor brought our mail we had to go without it until some member of the household would get time to go to the postoffice.

What a wonderful change has taken place! Today you have a free rural delivery, and instead of reading news a week or two old, you have it brought to you every day and served to you just as fresh as it is to your brother in the city, and I predict that in a short time every farmhouse will have a telephone, so that you can talk to the city or your neighbors, while taking the much-needed rest from the arduous labors of the day.

You are also to be congratulated upon the fact that you are awakening and more fully realize than ever before that you are one of the great factors in our body politic, and one that must be reckoned with by the great political parties in the future. And also that you are beginning to look out for your own interests while helping others. I do not want to advocate selfishness, but self-preservation is the first law of nature, and if you do not take care of your own interests, there will be no one to take care of them for you.

It is well for you to get together in meetings of this kind and to exchange views on matters relating to your affairs. It broadens your views

and establishes a better feeling and arouses a greater interest in the work which you have undertaken to do.

Wishing your organization every possible success, I again bid you welcome, and here tender the keys of the city to your President, for your use during your stay with us, feeling confident that the privileges thus tendered will not be misused.

THE UTILIZATION OF CONVICT LABOR IN MAKING ROAD MATERIAL.

W. S. BLATCHLEY, INDIANAPOLIS.

The question of good roads is at present one of the most vital with which the farming community of Indiana has to deal. Many of the better counties of the State long ago realized the importance of this question, and where good road material was conveniently located constructed gravel or macadam roads radiating in all directions from their country towns. In other counties, possessing a plentiful supply of road material, the importance of the question has not yet been realized, and for six months of the year the farmers are practically isolated from market, or, if they manage to reach it once a week, can only haul thereto a fraction of a load. Such counties are readily recognized as far below the average in wealth, prosperity and the public spirit of their citizens.

Professor Latta, of Purdue University, a few years ago made a careful study of the good roads question in the State. He received reports from hundreds of farmers, some of whom live on good roads once bad, and others on roads still bad. From these reports he computed statistics showing that the difference between good and bad roads amounts to 78 cents an acre annually on the farms. Applying this amount to the whole State—36,350 square miles, or 23,264,000 acres—we have the sum of \$18,145,920. Of this amount, fully two-thirds is wasted every year in the State in the loss of time and in the loss of opportunity in securing the best market for the produce of the farm.

This question of good and bad roads came to me very forcibly in the past week while writing a paper on the petroleum industry in Indiana. In preparing a map for that paper I found that many farms in the very center of productive territory had not been drilled because they were on mud roads and distant from railway stations. The iron drive pipe, casing and tubing and the derrick timbers necessary for drilling in and pumping a productive well are very heavy, and it is almost impossible to haul them over many of the roads in the oil field between the first of November and the first of April. The operator, therefore, develops first those leases on pike roads or close to railway stations, leaving those on mud

roads to the very last. The farmers living in the oil belt, who are receiving or might be receiving large sums in royalty for their oil, should see to it that their farms are available at all times. A successful oil operator is usually a busy man, who does not wish to lose five-twelfths of his time on account of bad roads; hence he leaves the territory with mud roads and operates that which he can reach 365 days in the year.

During the past decade our vehicles for rapid country travel have become more numerous and of an entirely different style from what they were twenty years ago. Almost every farmer now owns his own buggy and carriage. The bicycle, by countless thousands, has come to stay, and the automobile will soon be more common on the improved roads of the State than the two-horse surrey was a dozen years ago. The owners of all these forms of vehicles are demanding, and they will continue to demand, better roads, and the legislator must soon learn that the question is one of the most important which he has to face.

Another phase of the good roads question came into existence with the twentieth century. Five years ago the rural mail carrier was an almost unknown factor in our State. Now he travels in every county, carrying his messages of joy or sorrow to the farmer's door each day. The daily paper, with its market reports and news of the day, is, or can be, put regularly into the farmer's hands within a dozen hours of its issue, even though he lives a score of miles from a railway. Time is the most valuable possession given to man on earth, provided he has the ability, and some necessity which the rural carrier can bring, is the most important advantage of the rural free delivery system. But this system will not, can not and should not be made a permanent factor in the country unless the farmers see to it that the roads are kept in such a condition that the route can be covered in the time allotted. The United States Government, through its Postoffice Department, demands that farmers do this much, and the demand is just.

Those farmers of the State who have had the foresight and good judgment to improve the roads in their vicinity are, for the most part, contented and prosperous. Their products are easily gotten to market when the price is at its best, and the wolf never rests on his haunches before their doors. On the other hand, those living in the bad roads district endure for more than a third of their time an enforced idleness which makes them poorer and causes them to cry out against their lot in life, rather than against their own short-sightedness on the road question. Indiana is rich in clay and suitable for vitrified brick, rich in gravel, rich in stone for macadam roads. There is no reason, therefore, why every public road of any importance in the State should not be improved so that it can be traveled with ease any day in the year.

Let us now take up a second phase of the question. In the penitentiary at Michigan City and in the reformatory at Jeffersonville are 1,800 men, most of whom are able-bodied. Only a few years ago half of these

in the Michigan City prison were being marched about to furnish them exercise, because the labor organizations of our State were opposed to their competition. The industry of the honest citizens of the State paid for maintaining these criminals in idleness. Even at the present time, under the contract system there in vogue, the prisoners at Michigan City are making shirts and socks in competition with sweatshops, and it may be said that prison industry has the general effect of degrading free industry in the same lines to the sweatshop basis. The making of hollow-ware, chairs, brooms, barrels, leather goods, etc., by the prisons of this and other States has had a killing effect on these industries. The convict contract system does compete with free labor and free industry, and the agitation against it can not and will not cease until it is thoroughly abolished.

At the Jeffersonville reformatory chains are being made in competition with the free chain industry of the State. The convicts are compelled to perform "tasks" not required of the chain worker, and the contractor pays 30 to 40 cents a day for each convict, while the chain manufacturers pay from \$4 to \$5 a day to the free laborer who performs the same work. A threatened increase in the output at Jeffersonville, if carried out, will mean the destruction of the free chain industry throughout this and adjoining States.

The contract labor system is a slave system, with no reformatory or redeeming features about it. It is a system which often leads to the debauchery and corruption of public officials. It is a system that robs labor, destroys factories and turns over to private individuals an asset of labor which should be used for the benefit of the people. The lawbreaker owes a debt to the community, and any profit from his labor should go to the community.

The State lost, in 1902, \$115,546.29 on its convicts. The average maintenance cost of supporting the convicts, including salaries of prison officials and running expenses, approximated 40 cents a day per convict. The labor contracts at Michigan City are 40 and 45 cents per man per day, hardly a fraction above the cost of their maintenance; and it is said that, at Jeffersonville, some of the contracts are actually below the maintenance cost. Owing to the supposed semi-employment of the convicts on contracts the State in that year secured from contracts only one-half of the maintenance amount. The total maintenance cost of the 1,719 convicts was \$231,292.82; the total earnings were \$115,746.53. The average maintenance cost being \$132 per man, the amount the State lost would support 875 convicts—over half the prison population.

Taking up a third phase of the question, we find that there are at present, in a number of counties in western and southwestern Indiana, vast undeveloped deposits of shale and fire-clay, which, by practical tests, have been proven suitable in every respect for the making of the best grade of paving brick and sewer pipe. Beneath most of these shale beds,

and overlying the fire-clay, are thick veins of coal, far more than sufficient to burn the brick and pipe. The presence of this fuel is a factor of great advantage, as it reduces the cost of manufacture of the clay products to the lowest possible figure. In many counties, especially in the northern part of the State, there is an absence of gravel, stone or other material suitable for the improvement of the roads.

Knowing the presence of these raw road materials in inexhaustible quantities, and having a knowledge also of the crying necessity on the part of the public for better roads, as well as the demand from all labor organizations for the abolishment of the contract labor system among our convicts, I proposed a few years ago the following plan for utilizing convict labor for the public good in the lasting improvement of our roadways: Let the General Assembly Authorize the purchase of an extensive bed of shale in western Indiana, and the erection upon it of a modern paving brick factory. Equip this factory with convict labor, and put several hundred additional convicts to breaking stone for foundation and cutting it for curbing. This brick and stone can then be furnished at the plant at less than one-sixth present prices to those counties devoid of other road material, or may even be given to them, if they are not willing to buy it.

The cost of a paving brick plant, completed for work, which has a capacity of forty thousand output per day, is about \$40,000. One with double the capacity costs about \$60,000. The greater amount of this expense is for building and kilns, which could, by convict labor, be constructed of brick made on the spot, so that the cost to the State would be less than half this sum. After the plant is once in operation, with fuel and raw material both at hand, the only outlay is for labor. Where the daily output is 80,000 brick, and the fuel is mined in connection with the shale, the number of hands necessary is about 100. These, at \$1.50 each per day, would make the cost of the brick with free labor about \$2.00 per thousand. With convict labor, the actual cost of the brick would be only the sum paid out for the maintenance of the prisoners. It costs 40 cents a day to maintain a convict. To this add 50 per cent. for wear and tear on tools, etc., and the cost would not exceed 60 cents a day. If 400 men were put to work making brick, the output for a year of 300 days would be sufficient to pave 194 miles of roadway. There are 42 brick to a square yard of roadway and 493,000 to a mile of road 20 feet wide. The cost of this brick for a mile of country road made by convict labor would thus be \$295. The crushed stone necessary for macadam could be prepared by convict labor with the prison and furnished at not more than 30 cents per cubic yard, and the curbing at a correspondingly low price. In California the cost of macadam made by convicts is 25 cents a cubic yard. Prisoners in Massachusetts are making it at 28 cents. One mile of roadway 20 feet wide will require 1,304 yards of macadam to make a foundation four inches thick, or a total of \$365.00, at 28 cents a yard. Adding

this to the cost of the brick makes the cost of the material for one mile of road \$660. Next comes the cost of transportation from the prison to the point where needed. The railroads of Indiana would doubtless cooperate in any plan of systematic road-building, as they have done in Illinois, California, and other States. In California, where there is but one railroad company, and that credited with being hostile to the people, the material is transported from a State convict plant at the bare cost of haulage, the rate being 25 cents a ton for a haul of 100 miles. Good roads are important tributaries to railroads, and this accounts for their readiness to assist in making them. At 25 cents a ton, it would cost \$625 to transport the brick and \$326 to transport the macadam for one mile of road 20 feet wide. Adding to this the cost of materials gives \$1,611.12 as the cost of materials on-board cars at the point of use.

The cost of grading, curbing and laying need not exceed \$600 a mile. The cost of teaming varies. For an average distance of two and a half miles it is 30 cents per yard for macadam. The cost of hauling the brick and macadam, based on these figures, would be about \$900.

Therefore, the cost of the brick road, aside from the cost of the materials, would be about \$1,500, or about one-half the total cost of the road, materials and all. It is the general statement of engineers that the cost of the materials is about one-half the cost of a road.

A road of vitrified brick, which, if properly constructed, will last half a century or longer, with little expense for maintenance, can then be built at a cost of not over \$3,100 a mile, the most of which would be for teaming, grading and the laying of the brick. For, understand, the plan proposed does not consider that the convicts be employed except in the preparation of the material, the latter to be furnished free to the counties. All grading, teaming, bricklaying, etc., should be done by free labor, as it is at present. The day of the chain-gang at work on the roadside, subjected to the gaze and jeers of the passerby, is, rightfully, a thing of the past. If the material is not made by free labor, such a road will never be constructed in the country, as its cost would be prohibitive.

Not only could brick and macadam be made for roadways in the prison which I have in mind, but all brick, both ordinary and pressed front, could be made for all public buildings, such as jails, court houses, school houses, insane asylums and county infirmaries. The shale and fire-clay is in every way suitable for such material, and it could be furnished at cost, which would not be over \$1.50 per thousand for the finest of pressed brick. The public pay the taxes to erect such buildings, and also the taxes for maintaining the prisoners; why not, then, have those prisoners prepare the material for public buildings, and so lessen the tax burden of the people?

A few years ago California was in the same situation as Indiana is to-day. Her convicts were idle, in deference to the wishes of her labor organizations. Her legislators passed a law authorizing the employment

of the convicts in the breaking of stone for road material. To-day that State is supplying the prepared stone to the counties at 25 cents a cubic yard, on board the cars, which is less than one-third the ordinary market price; yet sufficient to pay for the maintenance of the convicts. The railroads of the State are carrying the material at the bare cost of hauling, for they realize that the improved country roads will bring to them in the future a great increase in farm products for shipment.

Many objections to the plan proposed will doubtless arise, for the questions to be solved are important ones, and for that reason no plan can or will be presented but will have its weak points. The most serious of these objections is the cost of a new prison, which would necessarily have to be constructed at the plant. This, however, would be much less than is generally supposed, since the shale can be burned into ordinary and pressed front brick of the finest quality. The brick could, therefore, be made and the prison constructed for a very reasonable cost.

It seems, therefore, that, given an ever-growing demand for better roads, an abundance of nature's products which can be made in the best of road material, a large number of convicts able and willing to work, that we have a combination which, under the proper management, would give us the improved roads, furnish employment for our convict labor, and yet give no offense to that army of honest workmen whose interests and welfare are ever to be upheld.

GOOD ROADS, BUILDING AND MAINTAINING.

J. A. MITCHELL, NOBLESVILLE.

The discussion of the subject of "Good Roads" is very opportune, and especially so when this discussion is within a meeting of an organization of farmers.

Good roads bring and keep the farmer and his family in touch with the civilization of the larger world; good roads, in fact, make the farmer one of the dominant elements of progress, of prosperity, of culture, of intellect and of refinement. Man's nature is social, and demands such food for its nurture as is gotten only by mingling with his fellows. Deny him this, and he becomes selfish, narrow, sordid and morose. Social intercourse adds much to a man's capacity for enjoyment of the good things of life.

Bad roads separate man from his neighbors by impassable barriers; good roads annihilate distance and put him daily in touch with the thought and doings of the whole world. The intelligence acquired by this mingling with his fellowmen has a very decided commercial value, for a well-informed citizen is of far more worth to the State than he who never

sees a railroad train or an interurban car, nor reads a daily paper. It has been said that the heaviest tax imposed upon the farmer to-day is that of bad roads. Bad roads are expensive when we take into account the cost of transportation of the products from the farm to the railroad station. The difference in the cost of the haul on the railroad, which is but an improved highway, compared with that on the common roads is very great.

Oftentimes it costs more to haul a ton a mile over an unimproved highway than to haul it one hundred and fifty times as far on the railroad. But this is not all. Oftentimes it is not possible to haul any load for any price for part of the year over our common roads. It makes no difference what the market price of farm products may be, unless the market can be reached. Time would fail me to enumerate the items that go to make up the total loss occasioned by bad roads. This is not always to be estimated by dollars and cents, for much of this loss is of those things that go to make the farmer's life worth living, and many of these are of too great a value to put a price upon, as these may include life itself.

But the farmer is not the only one to be benefited by good roads, nor the only one interested in their construction and maintenance: all occupations and all industries of whatever kind, are the beneficiaries.

Road-building is to-day a question of importance; one for climatic conditions and other reasons hard to solve. It is said that the only way to an improved system of highways lies in the direction of legislation. I do not think so; but that public sentiment in favor of good roads must precede legislation; and when the public is properly aroused upon this subject, as it should be, we will have improved roads, legislation or no legislation. That legislation is needed, it is true, as our highway laws have become so fragmentary and disconnected by repeal and construction that it is next to impossible to tell what the law at present is. In this connection it might be well to state that the commission created by the last Legislature is now at work on the codification of the highway laws of Indiana; and all farmers or others interested in or desiring any changes or amendments in the laws from what they now are ought to be ready with their suggestions when the report of this commission is made to the next General Assembly.

Public sentiment is hard to awaken against established customs. Few people have seen the faintest conception of the enormity of the waste of public funds through the so-called road system that prevails in our own and many other States, a custom inherited from the old world more than a century ago, and long since discarded by it as unsatisfactory and unworthy to have a place in the civilization and progress of to-day. I believe that with better methods of road construction and maintenance, that without any increase of the burden of taxation, within a few years many, if not all, of our roads could be improved. In all other lines the

cost of production is being greatly reduced. Why should it not be so in this line?

I am convinced that it can be. In the construction of a road I mention three important factors: 1st, Grade; 2d, Drainage; 3d, Material.

But should I mention them in order of their importance, it would be: 1st, Drainage; 2d, Drainage; 3d, Drainage. The greatest mistake in road construction under any system is want of drainage.

The grade or grades form an important part in road-building. "A chain is no stronger than its weakest link," and a road is no better than its steepest grade or worst place. By this I mean the amount of tonnage or load that can be hauled is determined by the steepest grade; and the most important object to be attained in building a road is to reduce the cost of the haul to the lowest possible cost. The maximum grade used in the construction of the more recent gravel roads in our county (Hamilton) has not exceeded 3 per cent., but in many counties of the State this would be almost or quite impossible; but I would insist that it is false economy to build roads on steep grade, as it is impossible to maintain them, unless at an immense cost. The cross section of the grade of the road is not so important, other than it should be so as to shed the water off into the side ditch and should be a slope of not more than 6 inches from center line of road to edge of roadbed. If gravel is used for covering, the slope may be less than 6 inches, or even flat, the shed for the water being made by the placing of the gravel.

The most important and of the first consideration in the construction of a good road is thorough drainage. This should be done by grading the road so as to give "fall" to the side ditches. Open drains or ditches should be constructed on each side of the road in width and depth to answer the requirements of complete surface drainage, and a tile drain on each side and just inside of the outer edge of the roadbed should be constructed to a depth of about 4 feet below the finished surface of the grade. This drainage should be of good selected drain tile of not less than 4 inches, and need not be more than 6 inches in diameter. This drainage would drain out and keep dry a bed of earth to depth of 4 feet between the drains, and make it next to impossible for a dirt road to get bad, much less an improved one. This would also protect against water from the fields working into the roadbed, causing it to become soft and sponging and breaking through in the spring.

The drainage of the road with tile and side drains should be done, whether it is improved with gravel or other material. This could be done under the present law, and a wonderful change would result in the betterment of our country roads. These drains in themselves would be a first-class improvement for any road and would reduce the quantity of the road material to be used in the improvement of the road later fully one-half. If the drainage is put in, in this way the roadbed becomes solid, and the depth of road metal may be decreased to say 8 inches in

depth, or perhaps less. There is nothing that will so cheapen the building and maintaining of roads as good drainage. After the roadbed is graded and thoroughly drained, with the roadway not less than 32 feet with a roadbed 24 feet, place thereon good gravel to the width of 10 feet, 5 feet on either side of the center of road, and to a depth of 15 inches on the center line and 8 inches on the out edges. Gravel, no doubt, will be the most practicable material from which to construct roads in Indiana for many years yet to come. I believe, however, the most economical road to construct is a double-tracked road, with a roadbed 32 feet wide, 8 feet of brick and 24 feet of earth road. I believe that, taking the cost for a term of years, this manner of construction would be far cheaper and more satisfactory. This would give a line for heavy traffic in winter and also a line for summer traffic and lighter travel. The first cost of this would burden the present generation too heavy under our present laws and would in many cases work great hardship. The successful and equitable adjustment of the cost of road-making has not yet been found. That the whole burden of the cost of road improvements would come from the land owners in the immediate vicinity of the improvement, or that the whole burden should fall upon land owners only, I do not think will ever solve the problem of good roads.

A bill has been introduced in our national Congress appropriating \$8,000,000 annually for the next three years in aid of good roads; the National Government gives to rivers and harbors some thirty millions annually, it gives the cities great public buildings, costing \$75,000 to \$100,000 each, making an investment in many cases that the Government could not get a private corporation to finance under any circumstances. But the congressman securing an appropriation in such district is invariably returned. Why not distribute these favors where they will do the greatest good to the greatest number, and that is in the improvement of our highways? It seems to me that the last Legislature in a small way began this work in the right direction by setting aside 5 per cent. of all money that comes into the hands of the township trustee for the road fund of his township, to keep open and to keep in repair our rural mail routes. The general Government, I think, could very appropriately assist in this work along these lines, in view of what it has done and is doing in the opening up of our rivers and harbors.

Some good road-building in our county is being done by the people, by the method of donation or by assessing themselves. They build the road very cheaply in this way. Some good roads have been built at a cost of from \$600 to \$800 per mile. We do not need more laws so much as we need more interest in good roads and a determination to have them. Many complain, however, that the burden is heavy to the farmer who intends to make his permanent home on the improvement he donates, because of the fact that his lands are afterwards listed higher for taxation and the increased burden he has assumed is made permanent. And, in turn, it has not been shared by his less progressive neighbors.

The maintenance is, to my mind, more important than road-building. We must secure a good method of maintenance before we can secure and keep good roads. No road is permanent. A good system of maintenance will make a good road better, and a bad system of maintenance will make a good road bad. We must first learn to care for bad roads before we will be able to have good roads to care for. As soon as a road is improved it should be cared for, as it begins to need attention at once. A "good road is one that is hard, smooth and serviceable in all seasons of the year and under all conditions of the weather." If we apply this definition to Indiana roads we would have very few miles of good roads in our State.

There are over 8,000 miles of gravel road in our State, principally in the northern and central counties, and we spend on the maintenance of these over one million five hundred thousand dollars annually. This, when estimated by the mile, is quite a great deal, and with all this expense our roads are in good condition not more than five or six months in the year.

While I would not advocate any immediate and radical change in our highway laws, as some engineers do, yet I believe there should be a flexibility given to our laws, so as to permit a variation of our methods of maintenance as to enable us, with no greater burden of tax on the people, to obtain better results. Cut out the personal method where it is desired to do so, and try in its stead the method of "constant attention." My idea is to begin with what we have and where we are and work toward better results. I believe that the amount of money expended now should materially increase the quality of our roads.

I believe that we should divide the roads into sections, and employ one man to each section of 10 or 15 miles, and then require the man and his team to put in his whole time in caring for that portion of the road and keeping it in repair. Thoroughly systematize the work of maintenance of our roads in this way, and we will have better roads and less waste of money.

I should like very much to go into detail, but time will not permit. I wish to say, however, I hope to see the element of politics eliminated from road maintenance, and would like to see men appointed to these places who would be kept there as long as their work gives satisfaction, and no longer—merit and efficiency being their only recommendations.

FORESTRY, THE ORIGIN AND CAUSE IN THE UNITED STATES.

W. H. FREEMAN, INDIANAPOLIS.

Forestry is a sign of the times, a presage in the lumber situation. As long as the impassive wall of the forest confronted the lumberman he cut regardlessly, heartlessly, thinking only of the present returns and pocket

profits. But when shafts of light began to appear between the trunks of the trees he stood face to face with hard reality and saw that he had not stopped to think about that, unless he could build up where he had torn down, he would soon be at the end of his course. Then he began to look into forestry.

To most of us the profession of forestry suggests something new. But, be it known, it is not new in any sense of the term of discovery, although within the last ten years only has it come before the all-seeing American eye and held it. Restrict the statement to this country and come nearer the mark by calling it a newly-recognized profession, whose future economic conditions now seem to be assured. It is a significant fact that the first settlers on the Atlantic coast were the first foresters of this country. One of the primordial laws which they enacted as they stood on that white strip of sand and rocks between the ocean and a continent, black and heavy with endless forests, restricted the size of the timber to be cut for cordwood and preserved the long, tapering pines suitable for masts. They were emigrants from a country whose policy, even then, was forest protection; they knew the value of a stand of timber; they saw in the young saplings the gigantic trees. In the span of years which followed, the crusade of pioneers kept fighting away from the Atlantic, and this westward movement, especially in the latter part of the nineteenth century, brought about a period of stupendous railway building which has never been equaled. The old protective attitude toward the forest merged into a mercenary one, mainly because of a greater love for the almighty dollar and because the timber supply seemed to be inexhaustible. Since then there has been an appalling depletion and despoilation of our forests, the culmination of which has given rise to a crying necessity of forestry and forest protection.

A New and Significant Idea.—To the majority of Americans forestry is a new thing. It is safe to say that one-third or the population has never heard of forestry, and one-half of those who are acquainted with the term have vague, misconceived ideas or no ideas at all. They do not dream that it bears directly upon them, that it affects the cities as well as the woodlands. President Roosevelt declares that the primary object of our forest policy is the making of prosperous homes, not only starting them prosperously, but keeping them prosperous. He has termed the forest problem in many ways the most vital of the United States. In discussing it he gave utterance as follows: "Public opinion throughout the United States has moved steadily toward a just appreciation of the value of forests, whether planted or of natural growth. The great part played by them in the creation and maintenance of the national wealth is now more fully realized than ever before.

"Wise forest protection does not mean the withdrawal of forest resources, whether of wood, water or grass, from contributing their share to the welfare of the people, but, on the contrary, gives the assurance of

larger and more certain supplies. The fundamental idea of forestry is the perpetuation of forests by use. Forest protection is not an end of itself; it is a means to increase and sustain the resources of our country and the industries which depend upon them. The preservation of our forests is an imperative business necessity. We have come to see clearly that whatever destroys the forest, except to make way for agriculture, threatens our well-being."

In other respects, as well, it is remarkable how many industries are related and dependent upon the forests and, therefore, upon forestry. Lumbering, the fourth great industry of our country, has created forestry. That fact alone is an acknowledgment of dependency, and in it there are signs which those related to or acquainted with the industry can not help but read. Timber is indispensable to mining, manufacturing, railway building, transportation and commerce, and even the grazing industry is closely allied to forestry in that the large ranges good for winter would be worthless without the summer range in the forests. The advent of a timber famine evidently means the curtailing of more than one great industry. Therefore it is to be expected that men affected more or less, in a business way are looking ahead and setting new ideas to assure and to perpetuate their industries.

Forestry, in its briefest definition, is the science of conservative lumbering. It is the study of the management of the forest by which the owner secures the greatest returns while, at the same time, he protects and perpetuates the younger trees in such a way that he will always have a forest from which he can cut lumber at certain periods of rotation. There is a cool, breezy sound about forestry that suggests woods, with flowers; but, be it understood, in its cardinal aim, there is no entry of the aesthetic or the poetic. It is not an apology created for certain men to work in the shade and fragrant breezes of the forest. It is a business proposition which involves more deep thought, keen foresight and stronger physical endurance than are demanded by many other kinds of business. When the lumberman accepts forestry, he accepts a common sense foresightedness in regard to his industry. He treats his forest as a crop, and gathers the harvest when ripe. Where formerly he ruined and despoiled the young trees in the cutting of the older ones, he now protects and matures them for future lumbering. He sacrifices present minimum profits on the small trees for future maximum returns. He takes from the forest, yet he leaves the forest standing. There is no complete deforestation.

Profession and Schools.—Abroad the profession of forestry is an old and highly respected profession. European nations have developed it as a science to a point far beyond us, but they have been at it hundreds of years. There the forester is as highly honored and respected as the doctor or lawyer: He is answering just as great a calling. Likewise, the European forestry schools, especially in Germany, are unequalled. Many students, after taking their training in this country, go

abroad to finish their forestry education in the more advanced institutions, but it has been conceded that conditions in the United States do not make it expedient to adopt the foreign methods.

In the United States the three most widely recognized forestry schools are Yale, Cornell and at Biltmore, N. C., known as the Biltmore Forest School, on the Vanderbilt estate. The latter, however, does not give a degree, its course being for two years only. At Yale and Cornell four years are required to obtain a degree, unless the student is a graduate of another university, in which case he can graduate in two years. Half of the last two years is spent among the mountains in practical study. There is a long list of other universities and colleges which offer secondary courses in forestry. In most cases they are State universities. The tendency in the larger schools is, however, to make forestry a separate department.

The United States Policy.—The Bureau of Forestry, United States Department of Agriculture, has as its policy the encouragement and the protection of forestry and the forests, from which policy the most gratifying and practical results have been obtained. In circulars issued from time to time during several years past, it has offered assistance and advice to the lumbermen and owners of woodlands, advice and practical assistance on the ground in the handling of their forests. Of late more requests for aid from the lumber concerns have been received than they can respond to—requests from the balsam forests of Maine to the long-leaf pine region of Texas; from the hardwood mountain regions of the Carolinas to the red domains of California and Washington. The motive of such a proposition is to ascertain just what timber there is on the specified tracts, what the land will yield under a certain prescribed regime, what the regime is and whether or not it will pay in the end.

In no previous year has such progress in forestry been made as during the year just past, and at no time has public sentiment been so marked. The practical forest work in the woods was better in quality and greater in amount than ever before. But great though the progress has been in comparison with other years, it is yet actually small. The saving of the forests by wise use is but little greater than it was a year ago, except for the wider spread of a knowledge of the nature and objects of forestry. The means available are yet too feeble to make much impression on the gigantic task of preventing the forest destruction. The greatest interest manifested and the rapid progress of sentiment for forest preservation during the last year has been nowhere more conspicuous than in the Western States. The greater part of it may be traced directly to the growing desire for development in irrigation which followed the passage of the national reclamation law.

The operations of the United States Department of Forestry have been devoted to five great divisions: forest management of both public and private lands, forest investigation, forest extension, forest products

and records, all of which have been elaborately pursued, and the results tabulated for publication, to be distributed upon application to the bureau. The United States appropriates for the prosecution of this work annually about three hundred thousand dollars.

State Policy.—The attitude of the separate State governments has always been in favor of forest protection, but only recently have material steps been taken in the accomplishment of the purpose. In almost every State laws have been enacted for the propagation and protection of the forests. State forest reserves have been established and State Bureaus of Forestry created. This policy of the State has been quickened into fruition by the work of the United States Bureau of Forestry, whose members have had the welfare of the forests and related industries at heart, and there is now a movement being inaugurated to organize the work of the State and the United States into a uniform system.

Indiana is making splendid progress in forestry. Both the citizens of the State and the State itself are manifesting a spirit that tells for the future success of the work. The State is maintaining a well organized State department, with headquarters at the capitol, and has purchased and is supporting a forestry experimental station of 2,000 acres for the practical demonstration of timber culture for the education of the people in all useful knowledge pertaining thereto. It is the duty of the State Forestry Commission to collect, digest and classify information concerning timber culture, timber preservation, tree planting and general sylviculture, and to submit plans and advice to the people of the State concerning the same.

For the brief time (two and one-half years) that forestry, as a State institution, has been in operation, the sentiment and activity of all concerned are beyond criticism. As the past history of Indiana's forests is not excelled by that of any other State, we may prophesy that the forestry interests of Indiana will not be surpassed by that of any other State. No State in the Union has better opportunities for successful forestry operations, no State has greater industrial and commercial demands than does our own State. It is one of the most internal problems of the day; and we, as patriotic citizens to the welfare of all, should give it heed.

PUBLIC DRAINAGE.

L. ERT SLACK, FRANKLIN.

I do not know why the committee selected me to discuss "Public Drainage," unless they found out that I was part Irish, and knew the difference between a spade and a scoop shovel. I used to blow a bellows in a blacksmith shop, but I confess I am not much of a civil engineer. I do not own a farm, and the only real estate I have to drain is my back

yard, and I must confess that the snow got banked up in such a condition that the thaw came near draining all the water into my cistern. Being an attorney—about all the draining they do is to drain the money from the people's pockets into their own—and when it comes to ditching—well, they occasionally get into the ditch. An attorney, however, ought to be a good authority on draining. A ditch is generally a subterranean affair, and as to subterranean, underground matters attorneys are experts.

So, after interviewing all my good Irish brethren on the subject of laying tile, and counseling with my county surveyor as to what the laws were on this subject, it was determined that I should purposely inflict upon you the injury your committee has provoked by telling you some things you already know.

Now, the Legislature, theoretically, is all right, but, like a good many other ancient organizations, it has become modern and, therefore, a very uncertain quantity. I venture to say that if you were to collect the total amount of wisdom on the subject of drainage that is usually displayed in our Legislature, it would not be of as much practical value as the wisdom of a good civil engineer, a practical farmer and a person who has had five or ten years' experience in ditching. There is no doubt but what a good, strong, well-read man could change every ditch law on our statute books if he were so determined and would make the effort in the Legislature. This, of course, is not due to the incapacity of our Legislature in general, but the subject of drainage is a scientific matter, and not every person is informed on the subject. It is "old straw" in the Legislature, it has been repeatedly threshed over, and, like the old questions of "When Is Ground Hog Day?" and "How Old Is Ann?" it comes up every session in some form or other, and the general public runs the risk of something slipping through. It is my earnest hope that the Codifying Commission appointed by our Governor to codify the drainage and other laws will formulate a plain, sensible, practical and general law on this subject and that the next Legislature will pass it. Our present laws are too specific and are full of idle details. We need something more general, more liberal and less calculated to confuse the minds of the common people; in fact, that the lawyers can understand, at least. There are so few Philadelphia lawyers in my part of the State that sometimes we don't agree about the laws and can not understand them.

The present statutes upon the subject are fair, as compared with other States. Indiana at one time was a very swampy State, full of marshes and small ponds that were principally used as a loafing place for frogs and a sort of headquarters for mosquitoes. By a pretty fair system of drainage the farmers, who are after all the salt of the earth, have so drained our State that now we may go out of doors at night feeling that our friends will recognize us when we return, and our wives may stay at home while we go to lodge, and are not afraid of the beautiful, ecstatic and sweet music of a camp-meeting of bullfrogs as they sing their requiems of their departing heroes.

Under the present law any number of drains may be constructed on one water course and each drain having a separate and distinct allotment, when the whole drain could have and should have been constructed under one process of law and under one allotment.

Everything should have a system. There is no use of trying to carry off an 8-inch flow of water with a 4-inch tile, and yet I have had more than one man come into my office and complain, and offer proof of this very kind of drain. In the city of Indianapolis they have a civil engineer, and if you want to construct a tile drain or a sewer this city civil engineer, with his expert knowledge and skill, lays out your work and you follow his plans. Why not have just as systematic drainage in the country? An expert county surveyor or drainage commission ought to have power to control and regulate all our drains and make plans and specifications of all that are constructed, whether public or private. The first question asked is, "Should a drain be constructed?" and in solving this question who ought to be the judge? It should be some man who knows.

Our average viewers are not men of ability and learning in these particular matters, but our county commissioner, mindful of a half dozen votes that some faithful politician gave him toward his election, tries to pay the debt and square accounts by appointing his political friend as viewer. And, under the law, it must be a man not near the location of the drain and, consequently, as ignorant of the lay of the land as possible. Let us start right. If no drain is needful from a scientific investigation, made by a competent civil engineer, then don't construct it.

The less machinery, the better the machine. On the question of damages or benefits, let three good, competent farmers be selected to assess them.

There is too much carelessness and considerable incompetency in the construction of drains.

The size of tile, depth of ditch, its fall and particular location are important matters that should receive attention from competent, careful men. No man wants to pay for something he doesn't get, and the construction of drains, good or bad, costs money.

I have heard of very peculiar cases where men were assessed for constructing drains.

One story is told (I do not vouch for its being true) where a man was assessed more than any of his neighbors, and when he went to the viewers and made his kick and demanded to know why he was assessed so high, he was told that it was because he had such a large family. Another man was assessed high because he raised a considerable quantity of onions each year, and the viewers thought the ditch would carry off the smell and thereby better protect the public health.

Ditches do protect the public health, as well as improve the land, and right here let me say that this question of all our cities draining the filth of fifty, seventy-five or one hundred thousand people into our streams is

simply the rankest kind of injustice to our country people—a regular plan and organization to spread disease, and this matter should be attended to at once by our lawmakers. What is the use of farmers trying to prevent disease every spring? The swollen rivers carry the winter's accumulation of germs of all contagious diseases from our cities and deposit them on the farms, for our cattle, horses, hogs and even ourselves to take up in our every-day living. I know no subject that should appeal to the people more than this particular matter. While the farmers of our country have drained our swamps and driven out malaria, the city folks are draining their slaughter-houses and pork-packing houses and shipping it by water into the country. It is not worth while for me to denounce it further, as all feel deeply this rank injustice.

One more matter, and I close. A good tile drain is better than an open ditch. If you can carry the water with a 20-inch or two 15-inch tile, it is better than to have an open ditch. There are several good reasons why the tile is the best. It is agreed, first, that a tile will drain more territory. I suppose this is due to the fact that the soil becomes accustomed to the filtration of the water in going to a tile drain, while in an open ditch the water goes most overground to the main ditch.

Second, tile drains wash away no soil. No open ditch can be maintained as it was when first built. It naturally washes away the sides, and, if obstructions arise, will try to change its course.

Third, a tile drain does not take up any space. My observation is that farmers need all the land they can get, and even fence corners, and having a wide, open ditch through the farm often takes up much valuable soil and oftentimes divides your farm into fields that are neither necessary or useful.

Fourth, a tile drain enriches the soil. Water, in getting to a tile drain, must filter through the soil. This makes the soil porous, and porous soil is always richer and more productive than hard, compact soil. The air can reach the roots of the plant better through porous soil, and plants must have air containing nitrogen. If the land is good and you want to ditch it, put your ditch deep as you can conveniently, and, if your land is poor, put the ditch as near the surface as you can. This is best, because a ditch will hold moisture.

Now, gentlemen, we all must realize that our future happiness depends largely upon our health and our pocket-book. The drains of this country have been the bitter enemy of our country doctors, and have decreased the traffic in quinine; and we should hope that the subject of drains will be further extended, as it largely aids our farmers in making more money out of their farms.

Thank you.

INDIANA AT THE WORLD'S FAIR.

W. W. STEVENS, SALEM.

To the greatest exposition of all time—greatest in respect of lavish, important and interesting demonstration of the highest achievement of art, science and industry, as well as in extent of area and magnitude of construction—the Government of the United States and the authorities of the Universal Exposition invite your presence. This invitation the Indiana Commissioner would second and herewith, through your honorable body, extend to the people of Indiana, and particularly the agricultural people, an urgent invitation to be present. We do this with a confidence inspired by personal inspection, having been an eye witness of the tremendous preparations now practically completed in the creation of the "Ivory City" at St. Louis, and feeling certain that nothing approaching this admirable enterprise and entertainment has ever before been projected or is at all likely to be equaled, much less surpassed, by our generation.

Indiana will do herself proud with the \$150,000 appropriation made by the last Legislature to collect and install exhibits of the various industries that are bringing her wealth and reputation.

In the agricultural display the sum of \$20,000 will be expended to arrange a mammoth special corn exhibit, a general agricultural display, horticulture and live stock, and the interest that has been manifested by the good people, not only along these lines, but all others, presages a success that will do great credit to our commonwealth.

Special appropriations have been set aside to lay out fine displays in educational matters, woman's work, mines and mining manufactures, stones, fine arts, and many other industries of which we are proud.

The Indiana Building, now about completed, will be a credit to the State, and we have no hesitancy in saying that every Hoosier will be proud to own it and share in the hospitality that will be extended to all visitors.

Besides providing the very best display that can be made with the appropriation placed at our disposal, especial attention will be paid to caring for all Indiana visitors, and to see that they get what they want. We would urge upon every one who can spare the time and means to spend a few weeks at this exposition. How the world's best work can be seen housed in the most magnificent palaces ever built for such purposes! The student will have the rare privilege of attending an international congress of arts and sciences, and listening to lectures by the most learned men of every civilized country in the world—an opportunity which every young aspiring college student in the country should take advantage of. The inventor and mechanic will see the latest and best

mechanical ingenuity and get new ideas not found in books. The artist and architect will see a superb picture of beauty and harmony. The citizen who delights in foreign travel can see more strange sights and people in a ten days' visit to St. Louis next summer than can be seen in a trip around the world. The farmer will find object lessons showing the possibilities in his calling that will inspire him to improved methods, with the assurance of richer rewards, and the young and old on pleasure bent will have more kinds of entertainment at this World's Fair than they ever dreamed of, and can count on the best time of their lives. The economical and calculating can rejoice over the best bargain ever made by seeing a fifty-million-dollar show for fifty cents.

PRACTICAL CO-OPERATION BY FARMERS.

J. A. EVERITT, INDIANAPOLIS.

Mr. President and Members of the Farmers' Congress—I have not prepared a speech for this occasion. I want to talk to you a few minutes, then I want you to ask me any questions that may occur to you about co-operation by farmers, and any and all troubles that you have on the farm, and I will tell you how they can be cured on the plan of the American Society of Equity.

I need not tell you that farmers can organize, because they have organized before. They were the first people to organize and try co-operation on a large scale. That they did not have a perfect plan is not to be wondered at. It would have been surprising if the first attempt of any large class to co-operate for mutual benefit had been successful. Since then, however, we have seen every important industry and profession and labor organize and co-operate successfully. At the beginning of the twentieth century we find the extraordinary condition that the farmers are really the only people in the country who are not organized and agriculture the only industry that a set of self-appointed people who produce nothing attend to the most vital part of the business, viz., price the products.

It is a fact that can not be successfully disputed that there is not a crop raised on the farms that the farmers independently put the value on it. True, in some localities the price secured is above the city prices, or a few farmers raise superior goods and can demand an extra price, but even these are limited and tempered by prices made in the cities by boards of trade, food trusts, packers' combines, cotton factors, commission men, cold storage companies, etc. Manufacturers, merchants, laborers, and even professional men spend some money to secure a market for their goods. Oftentimes manufacturers expend as much to market their prod-

ucts as it costs to make them. Merchants appropriate a large per cent. of their receipts to advertising and display to make good markets. Professional men pay liberally to protect their professions, and laborers turn a considerable percentage of their wages into their union to insure permanency of good wages. So it is with every class and with every industry but farming. The farmer and his family work as hard as they can, long hours at the hardest labor to produce as big crops as possible, and then dump them into the hands of a set of non-producers who are the slickest set of individuals in the world to hold and manipulate until the world wants them for consumption. It is strange but true that in the enormous effort farmers are making to increase the production of their crops, which is the most approved method to commit suicide (the larger the crop the lower the price, they are goaded on and encouraged by the farm press, agricultural colleges and farmers' institutes, which never have a word of advice as to how to get a good price for the crops.

Former farmers' societies were organized primarily to buy cheaply. In other words, to pull business down to a level with agriculture. The American Society of Equity is being established to secure a profitable price for every crop farmers grow; in other words, to build agriculture up on a level with the best business in the country. The first and great object of the society is to secure profitable prices for all farm products.

No difference how much a thing may be desired, if it is impossible of attainment, expense and effort to accomplish it will be lost. The first object of the American Society of Equity is desirable, and it is possible of attainment. When it is accomplished all other good things for farmers will follow, and every serious farm problem, like labor, boys on the farm, education, improvements, fertility, good roads, etc., will speedily be solved.

The question, therefore, is, How can farmers through the American Society of Equity secure profitable prices for farm products? I reply briefly, by controlled marketing. To elaborate more fully I will explain as follows: The headquarters of the Society is at Indianapolis, Ind. This is called the National Union. Farmers are being enrolled as members of the National Union all over the country, and wherever ten or more can get together a local union is formed. The affairs of the society are managed by a board of directors. One of the chief duties of the board of directors is to decide the price of each crop as it is produced. This is called the minimum price, below which none of the crop should be sold. This price is communicated to all members, so they have the same advice, always at the same time. The medium of communication is an official paper published twice a month, and which it is proposed to publish weekly as soon as the society develops sufficiently. This minimum price will also be printed by other newspapers, so farmers not members will have the same information; in fact, we expect it will be printed in all papers printing market reports, because it will be the market price. It is hoped to

secure a million members for the society in a comparatively short time, when we predict enough of any crop can be controlled in marketing to compel the minimum price. Please understand that we don't expect every one of the million to do exactly as they may be directed about marketing. We don't expect anybody to hold when inconvenient nor to market when they don't want to, but we claim that among the million enough will be found who can and will hold back their crops, if necessary to make and maintain the price. All we want is enough to represent the balance of power. Or, to state it differently, to represent that part of any crop that appears on the market sometimes and makes a temporary surplus, as to teach farmers that as their crops are consumed in a year they must market them over a year and keep them out of public warehouses and elevators.

Please, also, understand that, while the society is getting its millions, there will be millions who are not members and will do the very things the society contends for because they are right, reasonable and equitable. Although the society has less than 100,000 members, the truths it promulgated about the equity of dollar wheat spread so generally that farmers did regulate their marketing and did compel a gradual advance in the price until it reached the price we set—one dollar.

Farmers can organize, because they have done so. Farmers will co-operate when it pays them to do so, as it will when the object is profitable prices. Farmers can control marketing. It is the simplest thing they ever undertook. Nothing complicated about it at all. They don't need daily advice. All they need to know is the value of the crop when produced at the base market, the cost of transportation; and that gives them the farm price. Now the only other thing to do is to sell at your price when the buyer will give it, and stop the minute he won't. When the year is around all the crop will be sold, because the world must have it; and you will have got your price. Consumers will pay a fair price for your goods if they can not get them at an unfairly low price. The world has not produced a surplus crop for many years. Therefore, why may farmers not get a fair price for what the world absolutely must have, our food supplies? I have touched on this matter very briefly. It is a very prolific subject, and I advise every farmer to think seriously and give some attention to the distributing end of his business, as well as the producing end.

Replying to Mr. Templeton's statement that he is opposed to a farmers' union to price their products and to all unions, I want to ask him or any farmer, Why have not farmers a right to price their goods? Somebody prices them. Have the speculators or gamblers a better right? Has the food trust a better right? Has the middleman a better right? Has the groceryman or miller a better right? When you drive right up to the grocery with a load of potatoes or to the mill with a load of wheat, what legal or moral bond compels you to ask, "What will you give me

for them?" What curse rests on you that prevents you from saying, "My price is so much." The trouble is not that we have unions, but that we have not enough unions. This country wants one more great national union, as broad as our country, founded on equity, which every man and woman can join and be the better for belonging. The greatest union of all, that will temper other unions and even compel an equitable, strong government! This is what the American Society of Equity aims to be. Its plan is broad enough, its objects are good enough; it rests with the farmers if they will build it up quickly.

FARMERS' MUTUAL INSURANCE COMPANIES' UNION OF INDIANA.

H. L. NOWLIN, LAWRENCEBURG.

This is an organization of the mutual insurance companies of the State and has a membership of thirty. While this seems small, we have nearly every company of which the secretary has knowledge sufficient to locate the secretary of the local company. There are supposed to be near one hundred and fifty local companies in Indiana, and it is the desire of the Union to get all of these to join it. With this end in view, we ask that you send to H. L. Nowlin, Lawrenceburg, Ind., the name of the company within your knowledge, together with the name and address of the secretary of said company.

According to the reports sent to the Union, there must be considerably over \$200,000,000 of insurance carried by these mutual companies; and these reports also show that the average cost in the mutual companies is about 20 cents on each \$100.00 of insurance per year, which means a saving to the farmers of over \$600,000 per year in the matter of insurance. This is likely a very low estimate, as some companies carry six million dollars and more, while a very few carry less than one million. One thing is very noticeable in the reports, and that is the very small loss by lightning where buildings are properly rodded. In fact, so few rodded buildings are struck at all, that it might be said that rods afford complete protection, as I believe every one that has been reported as struck was only slightly damaged.

Now, I will again request that you assist in giving information that will get all the companies in the State into the Union, that all may be mutually benefited. I thank you for this opportunity, and will mail a complete report of the 1904 meeting of the Union to any person requesting the same and sending a two-cent stamp to pay postage.

REPORT OF COMMITTEE ON PRESIDENT'S ADDRESS.

We, the undersigned committee in regard to the President's address, feel that the address, to have the full and best effect, should be published in full in the report of this Congress.

WILSON COREY, Chairman,
ELLIS HOUSE,
I. N. COTTON,
Committee.

PROPOSED AMENDMENTS TO THE CONSTITUTION.

To amend section 2, of the constitution, to read:

Sec. 2. This Congress shall be composed of one or more delegates from each county in the State; one or more delegates from each congressional district, and two delegates for the State at large; the district and State at large delegates being the regular credentialed delegates to the National Farmers' Congress; one delegate from the State Horticultural Society; one delegate from the Department of State Forestry and one delegate from the Prudue School of Agriculture.

To amend section 8, by cutting out the last five words of the section, to read:

Sec. 8. The chairman of each County Farmers' Institute of the State shall be the regular delegate to represent his county. Each county and supplementary institute is requested to select in open session one or more "associate" delegates. Each county shall be entitled to only one vote, except the district vote. If any delegate is unable to attend, he shall appoint his own alternate, who shall have all the rights and privileges of the regular delegate. Any farmer in the State may be an associate delegate, with all the privileges of the regular delegates.

W. H. NEWSOM, Mover.
J. G. PERRY, Second.

To amend section 10, by changing the words "first Tuesday in February" to the words "second Tuesday in December," to read:

Sec. 10. This Congress of Farmers shall assemble annually on the second Tuesday in December, and in special sessions upon call of the Executive Committee, and the Congress shall, in open session, determine the place for holding the annual meeting.

D. F. MAISH, Mover.
A. P. BURNSIDE, Second.

PROCEEDINGS
OF THE
Forty-Fourth Annual Meeting
OF THE
Indiana Horticultural Society

HELD IN THE STATE HOUSE
DECEMBER 7th and 8th, 1904.

The forty-fourth annual meeting of the Indiana Horticultural Society was called to order at 1:30 p. m., Wednesday, December 7, 1904, with President Warder W. Stevens in the chair, who said:

Ladies and Gentlemen: I am glad to meet and greet so many of you here at the opening session of our annual meeting. As many of you know, our summer meeting was omitted because of the fact that nearly all of the horticulturalists in the State were engaged in the work of collecting and sending fruits to the World's Fair at St. Louis, and on account of this it was thought best to omit our summer meeting. I think we should now make it up by putting in good time here along various lines of useful things that will be of interest to the Indiana Horticultural Society.

We will now take up our regular program. The first will be an invocation by A. W. Shoemaker, of Daleville, Indiana.

A. W. Shoemaker: Our Father and our God, as we assemble here this afternoon we recognize that it is fitting that we should call upon Thee and ask Thee to send forth Thy blessing and Thy benediction upon us in the hours and days that we are assembled here together. Grant that we may realize that we are laboring together with Thee, and that without Thee we can do nothing; that all we have and are, or ever hope to be comes from Thee, the true and the living God. We come into Thy presence this afternoon realizing and recognizing that without Thee we can do nothing, and we call for Thy assistance in all that we may attempt, and grant, dear Heavenly Father, that something may be accom-

plished in these meetings for the uplifting and betterment of our people. Grant that the means of education which this Society shall use shall be for the promulgation of the true, the beautiful and the good. We ask that Thy blessings may rest upon the exercises of the hour, and upon the persons here assembled, and grant that it may be the means of such an education as shall be of benefit to our people in the State, and that our people may be better able and qualified for the purpose for which they have been called. Give us Thy blessings while we shall live, and when death comes may we be gathered home as Thy children. We ask it in Thy name. Amen.

President Stevens: I wish to name some of the committees which we shall need at this meeting in order that they may take up their work as soon as it is ready. The committee to pass on the fruit and flower exhibit shall consist of E. Y. Teas, W. H. Lafuse and Mrs. H. M. Stout.

The Auditing Committee shall consist of J. C. Radcliff, John Apple and C. N. Lindley.

There may be some other committees, but they will not be appointed here, but will be appointed as they are required.

Is Mr. Swaim, the Vice-President in the room? Mr. Swaim, will you please take the chair?

Chairman Swaim: The next topic upon the program is the President's address by W. W. Stevens.

Mr. W. W. Stevens: Mr. Chairman, Ladies and Gentlemen—The annual meetings of the Indiana Horticultural Society are always occasions of interest to progressive fruit-growers, who strive to keep pace with the world's progress. Each year the wideawake horticulturist picks up new ideas or makes new discoveries along some line of his work that are revelations to every other horticulturist, and the object of these meetings is for us to come together, compare notes and scatter broadcast any information we may have obtained by reading, investigation or experiment.

This is a business meeting and we are glad to note the practical trend of the present-day farmers' and fruit-growers' gatherings. In many places we notice that local pomological and horticultural societies are having their "orchard field days." These meets are held in orchards, where the methods can be demonstrated with the real objects at hand. It seems that such surroundings should inspire a society to seek after those things which will aid its members in their everyday work. This is a very practical age in which we live, and in our business we must be very practical if we would win the greatest success. I would not discourage wholesome, entertaining meetings among farming classes, for there is as urgent need for the latter as there is for the former. Good social

times and entertainments will do more to keep the young man and woman from contracting the "city fever" than any other factor. But when a business meeting is announced, make it a business affair, and the information you will receive will generally be in a more available form than when diluted with many discussions. If men come to a meeting expecting to get other's experience to compare with their own they want it to be practical, i. e., given in a simple form, and it is this that we are coming to see in the trend of these meetings.

Time is valuable, and whoever is reading a paper or delivering an address before a meeting of this kind is monopolizing as much time as the length of his or her paper or address, multiplied by the number of persons present. Then, be brief; be explicit, be practical in your work. Flowers in their place and flowery language and poetry are admirable, but geraniums in cornfields and purely oratorical flights in the midst of purely practical matters are weedy and should be plucked out.

If the year 1904 had been left off the calendar or Indiana fruit-growers with all their trees and fruits could have slept over until 1905, many think it might have been as well. While there may have been satisfactory results with some fruits in a few favored localities, frosts, droughts and unseasonable conditions generally cut the heart out of both pleasure and profit of the 1904 fruit crop. Insect and fungus troubles have increased and the year has been noted for fruit of inferior quality and profits very far from satisfactory. Those whose business it has been to scour the State for fine specimens of fruit to exhibit at the World's Fair at St. Louis can best testify to the truth of the above statements.

I fear that very few of us realize what the vast increase in wealth, prosperity and refinement among our American people mean to the fruit-growing interests of the country. I think I am safe in saying that where a dollar's worth of fruit was consumed ten years ago ten dollars' worth is wanted now. And unless all signs fail, one hundred dollars' worth will be required to supply the demand ten years hence, and the Indiana fruit-grower should be prepared to supply his share of fruits that may be wanted.

This demand, however, is going to be for finer and better fruit, carefully graded and selected, honestly packed in attractive packages of such size as can best be transported directly as possible from field and orchard to consumer.

Don't imagine for a moment that you will ever see the markets glutted with high-grade fruits. Commercial orcharding offers a most profitable opening to all who embark in the business and are willing to do things well. I believe that a ten-acre farm in any good fruit section of the State, if rightly planted and cultivated in small fruits and orchard, will give better support to a family than a two-thousand salary in the city. While a twenty-five-acre orchard on some of our hill lands is a far better investment than a ten-thousand-dollar life insurance policy. We

know of fruit lands in our State that are made to net their cost value each year from the sale of fruits grown thereon, and they are priced at from \$100 up per acre.

The soil and climatic conditions of Indiana for fruit growing are equal to the average of the country, while our nearness to large markets gives us a great advantage over many other fruit-growing States. With a network of electric lines covering a large area of our State, the trolley express, rural mail delivery and most important of all, the parcel post that is coming next to handle our lighter and more valuable products quickly and cheaply, the Indiana land owner has bright prospects before him in commercial horticulture.

The best business in sight today for energetic, educated young men and women, if they love the soil and trees and plants that can be grown thereon, is commercial horticulture on Indiana lands adapted to fruit culture.

The State now appropriates the sum of \$1,500 to advance the interests of horticulture. This Society has the management and control of this fund. At the end of each year we are required to show where and how this money has been expended. I think the time has come when we should make an effort to get out into some new paths that may lead to a more rapid development of the fruit industry. To this end I would suggest that such sections of our State as are specially adapted to the growing of any kind of fruit be advertised as liberally as our means will allow, thus informing the world what we have, what we can do, as well as the cheapness of available lands.

Apple storage has become one of the most important features of the fruit industry. It enables the fruit-grower to have a good market for his products the year round instead of about seven months in the year. The grower and handler must learn what varieties are suitable for storage and what are not, what conditions must be provided to secure the best and most economical results, and at what time and under what conditions the different varieties must be put upon the market. Our experience at the World's Fair has shown us that apples are exceedingly variable in length of keeping. Some varieties cannot be placed in cold storage profitably at all. The problem of selecting varieties and storing them properly is, therefore, a complex one and this Society should take the matter in hand and solve it in so far at least as the producer is interested.

The matter of getting the producer and consumer as near together as possible should be looked into carefully and every encouragement possible extended to those who are operating commercial orchards.

I think our funds will justify it, and the importance of our fruit interests demand that we empower our Secretary to give his entire time to this work, the same to be carried on under the instruction and advice of

the Executive Committee. We should also ask for a room to be set apart in the State House for our exclusive use for an office where our property may be secure.

In fine, let us at this meeting plan to do something, and not put in all our time telling what we have done in the past or speculating about the future.

Chairman Swaim: I believe it is customary to refer the address of the President to a committee for action.

Mr. Flick: The program says discussion and reference.

Chairman Swaim: Then we will have the discussion before the reference. Has anyone any remarks to offer upon the suggestions of Mr. Stevens? If they have, we should be glad to hear them now.

Mr. Flick: I do not feel like discussing this paper, and I shall not discuss it, but I just want to say that I like the recommendations, which will make this Society a more stable one, and one that will give our Society a permanent headquarters and a place where the horticulturists of our State who are visiting the city may have a place to call and get such information as they feel they need. I think we should have an office which is kept open. I especially like that recommendation. I have found that we are hampered for help for a great many things. There are many things which should be done and which would be very useful for the Society and would make money for the growers of fruit of the State, but they can not be done properly, therefore they are not attempted at all. The office at this time keeps a very accurate crop report, which has been very useful and is called for by different parties in the United States. Now, we ought to have a closer connection with each fruit-grower in the State so that we might be able to refer him to the best places for marketing his fruit. The Secretary has done this to some small extent, which has been a benefit to some fruit growers. We should have a list of the orchards in the State and the comparative amount which they produce each year. These and many other things should be done which would be of use to horticulturists and advance the interests of the State.

Mr. Ratliff: The Secretary did not intimate where it would be proper to have this office, and inasmuch as we have a room here in the State House, Room No. 11, which was set apart for our use, I do not see but what that would be the one that would be available for this office if this suggestion should be carried out.

I like the idea advanced by the President of incorporating the fruit-growers and a dissemination of the idea of better fruit interests, and a dissemination of the knowledge to those outside of our own State. I furthermore endorse the idea of having a list of the fruit-growers available

so that when the shippers and consumers desire a list for the purpose of patronizing our home growers it can be furnished without much trouble. I have been called upon a number of times not only by men in our own State, but in others, to furnish a list of such fruit-growers as grow fruits that would meet their demands, and when we furnish such a list as this the fruit-growers are profited thereby. The only reason I can see why an objection should be raised in regard to the office would be to find some one that would take charge of it. It would be all right if visitors came in every day, but if there were only callers two or three times a week, or three or four times a month, the man that had it in charge might feel pretty lonesome sometimes, but this will not be the case. We will have plenty of visitors. I think this arrangement will be fine if it can only be carried out, then horticulturists can come and talk over matters of business and make such arrangements as they think necessary, and if the Secretary did not happen to be there someone would be there who would have charge of the books and other things belonging to the Society.

Mr. Teas: My understanding is that this room was built under the direction of the Indiana Horticultural Society in co-operation with the State House Commissioners for the special purpose of using it for the Horticultural Society, and it seems to be that they have as good a right to that room as anyone else has to any other room in the State House. I do not see why that room is not good enough. I may be mistaken about this, but this is my understanding.

I think the President's message informs us that there are probably only a few places in the State where fruit-growers can succeed, or where fruit growing is possible. I do not believe there is a township in the State but what has good fruit land, and a man of good common sense need not go to other States to find land that is good for fruit.

Mr. Zion: It seems to me that this argument is out of line with Mr. Stevens' suggestions. As far back as I can remember this Society has conducted its business according to certain routine lines because of the fact that our means were limited. So far as I can see I think we are losing a good opportunity. We have kept on these old plans for the last ten or fifteen years. I think we should take advantage of the opportunity we have for raising good fruit, and if our people will not do it we must advertise for those out of the State who desire to go into this business. It takes money to show up a good industry, but this will pay. Look at California and Colorado. I can remember back in the history of California when the fruit-growing interests of that State were not much better thought of than ours are here today. They discovered that they had an opportunity to grow fruit. Men came from the East—wealthy men—and built up beautiful homes, and they commenced the work of advertising

the State, and they never stopped until the good old State had invested forty thousand dollars a year for horticultural purposes. Mr. DeLong, who holds the same position that Mr. Flick does, received three thousand dollars a year for staying in the office and answering calls of the farmers and growers of fruit. Men coming to the city will, nine times out of ten, go to the horticultural office. At that office they have a splendid collection of the best information that can be got for different sections of the State and various kinds of fruit. California never made a better investment, and neither could she have made a better investment when she paid this man three thousand dollars as a salary. It raised the land from ten to twenty-five dollars an acre up to twenty-five hundred dollars, and it surprises me that the land owners of Indiana permit themselves to let their land go on as they have been doing and do not attempt to avail themselves of this golden opportunity. I think we should have ten thousand dollars a year. This is an insignificant sum when we consider the splendid opportunities which we have to make an investment. I think we should get out of this routine work and try to do some head work. At the World's Fair people from all over the United States were surprised at the apples that were grown in Indiana. They never thought we could do it. There is a feeling over the whole State that we have a great opportunity, and it strikes me that this is the time we want to make use of it. We want a reasonable, respectable appropriation and we will try to make use of it. We do not believe in crimping a good work. When the land owners see that they will get a great benefit from fruit growing they will turn their attention to it. When a man that owns only forty acres of land has an orchard of four or five acres on it, it almost doubles the value of the land, and it makes enjoyment and comfort for the boys and girls and all the family. I think we should get ten thousand dollars from the State.

Mr. Kingsbury: After that admirable speech of Mr. Zion's I think there ought to be a suggestion made like this, and the suggestion ought to be acted upon. That is, that we appoint a committee here to make a report, one to the Senate and one to the House, concerning these matters, and that we make a showing of the Indiana fruit which has been produced in the fruit districts of our State, and at the same time show what might be done all over the State with a certain appropriation, as Mr. Zion has suggested—ten thousand dollars—to carry on the work. This committee should endeavor to get this appropriation. Indiana is naturally a fruit-growing State, and it is helped by the large markets all around it, and if we had this appropriation we would soon get back the ten thousand dollars. I think we should expect this appropriation.

President Stevens: I would just add a word of explanation with regard to an office. I suggested that we secure a room exclusively for this purpose. Room 11 is used for public meetings. The Secretary has

spoken to me about this matter several times. There is no way of keeping things secure when we are only here one day in the week. The remainder of the time this room is used for all sorts of meetings, and our property is carried away, and it is impossible for us to keep it unless we have a room of our own, for we cannot even keep it under lock and key. It seems to me that we should have a room that is exclusively our own.

Mr. Kingsbury: It has been suggested here that all kinds of fruit will grow in every county of the State. There are certain localities where certain kinds do better than certain other kinds, and another county where other things will grow to a better advantage, so I think we should find out just where these places are, and grow fruit accordingly. Along this line I think our information should be investigated and published to the world. It seems to me that we should have more money from the State than we have been having. At the last Legislature we had an appropriation of fifteen hundred dollars. We must go before them again. We must advance and get out of our old ruts. We must keep pace with the other States along this line, and if we can show that we are advancing the work there will be no trouble in getting almost any appropriation which we may ask for. We have started an experimental orchard. The Society paid for the farm and the State gave us an appropriation to carry it on. If we will select persons from among the horticulturists of the State to carry on this work in different portions of the State and advance the interests I have no doubt but what the State Legislature, when they see that we are doing the work well, will come to us with an appropriation, a liberal appropriation, but before they will do this we must show them that we are trying to do something. We should do this before we ask for an increase in the appropriation. It is our place, therefore, to begin taking advanced steps and commencing something more than we have yet done. We should advertise more liberally and extensively than we have in the past to keep abreast with the other States. This is the reason I make these suggestions.

Chairman Swaim: Is there anything else along this line?

Mrs. Robbins: Would you like to have a woman rise and tell you what she thinks? I would just like to tell you what I think. If there were a headquarters in Marion County every woman could see that it would be a benefit to the Society, for when we come to Indianapolis we would like to have some one of whom we could ask questions and get information. I think we should have a place where we could receive counsel. Some one said that it would be a lonesome job for a man to sit there all day without any callers. Well, then, put a woman in there, for she could bring her knitting. (Applause.) She would lose no time, I am sure. I also know this, that the women of Indiana who are interested in

horticulture need more information than they have. This would inspire the women, and therefore inspire the men, and you would find in another year if you should start this, as has been suggested, that you would have to move more chairs in instead of moving some out, in order to make things look right. We would have a large meeting, because Indiana is a horticultural State, as all Indianians know. All we need is more enthusiasm.

Chairman Swaim: If there is nothing further I shall refer this matter to the committee, and if there is any further action to be taken it can be taken when the report of the committee is heard. This committee shall consist of J. M. Zion, H. M. Stout and L. B. Custer.

President Stevens, I turn the chair over to you.

Mr. Swaim: If you will allow me just one moment I would like to say a few words. This is our forty-fourth meeting. My recollection does not go back forty-four years, but as far as it does go back the meetings have been called to order by the chairman pounding on the desk with his fist or with his pen knife. I do not think it is exactly right for us to permit our Chairman to endanger his fists in this manner or ruin his knife or the desk by pounding on the desk with it for order, and so I have provided here an instrument which is commonly called a gavel. This gavel is made in the shape of an apple barrel. It is made out of an apple tree, the wood being taken from one of the old pioneer apple trees of St. Joseph County. I wish to present this to the Society for the use of the Chairman. The tree from which this wood was taken was said to have borne when living twenty different varieties of apples, and so it might have been called a family tree.

President Stevens, I place this in your care, hoping that it may never fall in less worthy hands. (Applause.)

President Stevens: I will say on behalf of the Society that we are pleased to have this gift from one of our members, and we will treasure it up in the archives of this Society for future time. I know that it is an instrument which we have needed for a long time, and I know we are all glad to get it.

Sylvester Johnson: Mr. President, I move you that a vote of thanks be extended to Mr. Swaim for his valuable gift to this Society.

Mr. E. Y. Teas: I second the motion.

(The motion was voted upon and unanimously carried.)

President Stevens: The next number on the program is the Secretary's report.

SECRETARY'S FINANCIAL REPORT FOR THE YEAR ENDING
OCTOBER 31, 1904.

RECEIPTS.

1903.

October 31. Balance on hand.....	\$29 06
November 1. Received from the Auditor of State.....	1,500 00
Total receipts	\$1,529 06

EXPENDITURES.

1903.

December 3. J. C. Grossman for expenses attending Board meeting	\$12 50
December 3. W. C. Reed for expenses attending Board meeting	9 00
December 3. Caleb W. King for expenses attending Board meeting	5 00
December 3. A. W. Shoemaker for expenses attending Board meeting	1 10
December 3. H. W. Henry for expenses attending Board meeting	11 90
December 3. James Troop for expenses attending Board meeting	6 35
December 3. Joe A. Burton for salary Superintendent Experiment Orchard	125 00
December 3. W. B. Flick on salary as Secretary.....	75 00
December 3. H. H. Swaim for expenses attending Board meeting	11 60
December 3. Warder W. Stevens for expenses attending Board meeting	12 50
December 3. H. W. Collingwood for attending annual meeting..	50 00
December 3. E. Y. Teas for attending Board meeting and clerk	8 75
December 3. Sentinel Printing Co., printing, postals and stationery	21 60
December 3. Walter S. Ratliff, expenses attending Board meeting	5 00
December 3. Sylvester Johnson, expenses attending Board meeting and legislative committeeman.....	20 00
December 3. S. Johnson for premiums paid.....	56 00
December 3. Ella A. Shera for reporting annual meeting.....	30 00
December 3. W. B. Flick, to reimburse him for amount overpaid Treasurer	43 50
December 3. Joe A. Burton for expenses Experimental Orchard	11 70
1904.	
February 26. Austin Denny, attorney's fees.....	10 00

August 26. W. B. Flick on salary as Secretary.....	150 00
September 17. S. Johnson for premiums paid at State Fair....	98 50
October 7. Joe A. Burton, Superintendent Experimental Orchard, salary	125 00
October 7. W. B. Flick on salary as Secretary.....	150 00
October 28. W. B. Flick for office expenses.....	163 92
October 28. Ella A. Shera for reporting Kendallville Horticultu- ral Institute	50 00
October 28. S. Johnson for expenses as Treasurer.....	50 00
October 28. Pratt Printing Co., balance printing monograph....	40 00
October 28. Ella A. Shera, balance on stenographic work.....	20 00
	<hr/>
Total expenditures	\$1,498 92
Balance on hand	30 14
	<hr/>
	\$1,529 06

Respectfully submitted,

W. B. FLICK, Secretary.

SPECIFIC APPROPRIATION FOR A FENCE AROUND THE EXPERIMENTAL
ORCHARD.

RECEIPTS.

Received from the State.....	\$250 00
	<hr/>
Total receipts	\$250 00

EXPENDITURES.

Paid for material, labor and construction of the fence around the Experimental Orchard	\$245 73
Balance unexpended	4 27
	<hr/>
	\$250 00

Respectfully submitted,

W. B. FLICK, Secretary.

President Stevens: The next on the program is the Treasurer's report.

TREASURER'S REPORT.

RECEIPTS.

1903.

November 1. Balance in treasury	\$29 06
November 1. Amount received from State.....	1,500 00
	<hr/>
Total receipts	\$1,529 06

EXPENDITURES.

1903.

December 3. Paid on warrants Nos. 66, 67, 69, 70, 71, 72, 73 to 74, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 88. November 1, 1904: 90, 91, 92, 93, 94, 95, 96, 97 and 98.....	\$1,498 92
Balance in treasury	30 14
	\$1,529 06

Respectfully submitted,
SYLVESTER JOHNSON, Treasurer.

SPECIFIC APPROPRIATION FOR THE FENCE AROUND THE EXPERIMENTAL ORCHARD.

RECEIPTS.

Received from the State	\$250 00
	\$250 00

EXPENDITURES.

Material, labor and construction of fence around Experimental Orchard	\$245 73
Balance unexpended	4 27
	\$250 00

Respectfully submitted,
SYLVESTER JOHNSON, Treasurer.

Sylvester Johnson: It is hardly worth while to go over these items because they agree with the Secretary's exactly. The balance in the Treasurer's hands at the end of the year was \$29.06. Immediately after or on November 1st I received \$1,500.00 from the State, so that makes the amount in the treasury \$1,529.06, and the expenditures are just exactly as the Secretary has given them. I think there is no use repeating it, but I wish the Auditing Committee would look over all the vouchers that are filed with the State Auditor. He requires the Treasurer to file his vouchers. I hope this committee will go over to the Auditor's office, which is right across the way, and examine them and see if they agree with the report.

Mr. Swaim: I move you that the reports be referred to the Auditing Committee.

Mr. Kingsbury: I second the motion.

The motion was voted on and carried.

President Stevens: The next thing in order is the report from the Experimental Orchard.

Prof. James Troop: I notice by the program that I am expected to report, and that Mr. Burton is also down for a report, so I suppose the main part of the report of the work done at this orchard will be given by Mr. Burton. He told me that he expected to be here this morning. You know he is in charge of the orchard and has been carrying on considerable work there on various lines, raising seedling apple trees, top working and testing varieties, fertilizers, etc. The committee visited the orchard once during the year—last August, I believe. We visited it in a body. We went over it and made some suggestions, and that is about all we have to report. I will say this, that a fence has been put up during the past year by Mr. Burton, which cost \$245.73. He tells me that it is a wire fence with concrete posts, with wire netting around the bottom so as to make it as near as possible rabbit proof and ground hog proof, although I have my doubts about its being either, especially ground hog proof. I wish to say that the experimental orchard is in good condition. If you are ever in that section of the State, any of you, I wish you would take the time to go and see it. I know that Mr. Burton would be glad to take you over it at any time, if you would only let him know that you were coming. Many of the different varieties are now beginning to bear, and it will not be very long until we will commence getting some returns from it.

I think this is all I have to say on this subject, Mr. President. I am quite sure Mr. Burton will be here to give a detailed report.

President Stevens: Mr. Troop, I should just like to ask what work you have outlined for Mr. Burton to do?

Prof. Troop: Along the lines I have mentioned—testing varieties, top working varieties, growing seedlings from selected stock, cross fertilizing different varieties and growing seedlings from them. And we also have a series of fertilizer experiments, mainly for the purpose of finding out if possible something—some remedy—for the root rot in that section. A portion of the orchard is devoted to that purpose almost exclusively. This is all I think of now that is being carried out.

President Stevens: Is Mr. Burton present? His report is next in order. If he is not present we will have to pass for the present on to the next, which is "A Fine Apple Orchard," by E. Y. Teas, of Centerville.

Mr. Williams: We have arranged with Mr. Teas that my son is to read my article first and E. Y. Teas will come next.

Mr. Williams, Jr.: Mr. President, Ladies and Gentlemen—Mr. W. B. Flick, our Secretary, asked me to prepare a paper giving my experience and how I succeeded in growing each year such fine crops of fruit while my neighbors for miles around have none worth naming. With but few exceptions I can answer your question by saying that I sprayed my trees.

I have two orchards, which were planted at different times; one of four acres, which was planted in the spring of 1882; the other, one of sixteen acres, in the spring of 1890, about which my friend, E. Y. Teas, of Centerville, Indiana, has kindly volunteered to tell you. I shall speak of the four-acre orchard only. This orchard is in the southwestern part of Henry County, Indiana, just east of the range of hills that skirt the eastern boundary of Blue River Valley. Just five miles below and on the same side of this ever-flowing river is the far-famed and noted orchard of Thomas T. Newby, of Carthage, Rush County, Indiana. At this time let me say that both Mr. Newby's and my orchards are planted on ground that was once covered by heavy timber, black walnut, poplar and sugar tree. The soil naturally is a rich clay, sandy loam, underlaid with gravel.

I planted my trees in rows two rods apart in the row and cultivated between them for seven years. I raised corn, potatoes and melons between the rows. I cultivated the trees the same as I did my corn, and I believe that I did that successfully, being careful each year to thin out and prune so as to make a nice symmetrical top. They grew very fast. I covered the soil each year thinly with stable manure. They increased in bearing, but some years the fruit was knotty and wormy, so I concluded to buy a spray pump and spray. I did so.

I gave this orchard three good sprayings with Bordeaux mixture. In the fall we picked from 70 Ben Davis trees 490 bushels of marketable apples, and apples being a good price, I realized over \$100.00 per acre that year. It was then that I decided to plant the sixteen-acre orchard.

I have had several paying crops since then, and they have always come when I sprayed my trees well. This four-acre orchard has a stream running through it, almost through the center, so I concluded to make a "special spray orchard" test out of it this year. The west side of the orchard we gave four sprayings, the first time before the buds had bloomed, second time just after the blooms had fallen and ten days later we sprayed again and the fourth and last spraying ten or fifteen days later; result, full of fine apples. The east side of the orchard we only sprayed twice, with the exception of a few trees that were sprayed four times. I did this to see what would be the result. From the trees that we sprayed four times we gathered apples that took the first prize at the Indiana State Fair, while the fruit from the trees that only had two sprayings, standing near the ones that had four sprayings, was not marketable. Every tree that was sprayed in May and June was loaded with

fine fruit. I have come to the firm conclusion that from many experiments that I have made that if we expect to raise nice fruit we must keep spraying until late in the season, especially so if it is a late and backward spring. You may ask me why. The potato beetle and other insects that we see do not hatch until the weather gets warm. We all know that if we place poison where these insects can get hold of it they are soon destroyed; just so with the codling moth.

Now, in regard to fungus rust, etc. Spraying with Bordeaux will keep it off. I could give you a number of proofs of this fact. I will mention one or two instances. Every tree that we neglected spraying shed its leaves in September, and trees where one-half only was sprayed, the side that was not sprayed shed its leaves in September, and the other side that was did not shed until late in the fall; conclusive evidence.

I sprayed most of my Kieffer pears; those I sprayed had no rust on the fruit, while those that were not sprayed, rust covered a great many of them.

Now, in conclusion will say, prune, cultivate and feed the trees while young, and spray every inch of them early and keep spraying until the middle of June, as long as you have an orchard, and you will always have plenty of fruit.

Not knowing what my friend Teas' will say about our sixteen-acre orchard, I just want to say that it was conducted on the same plan as the one that I have described. We sent 30 bushels of fruit from these orchards to the St. Louis Exposition and we hear they made a creditable showing for Indiana. (Applause.)

Hundreds of people come to my orchard and have carried away many of the finest fruit before we thought of making this exhibit, and many of my finest apples were sold that we might have exhibited here.

President Stevens: We will now hear from Mr. Teas.

A FINE INDIANA ORCHARD.

BY E. Y. TEAS, CENTERVILLE, IND.

It was my privilege on September 6, 1904, to visit by request the apple orchard of Samuel T. S. Williams, situated about two miles southeast of Knightstown, Henry County, Indiana.

This orchard of about nine hundred apple trees, occupying sixteen acres of high, level land, that was covered fifty years ago with a heavy growth of sugar maple and beech timber, has been planted fourteen years. During the first five years the land was cultivated in farm crops, corn, potatoes, etc. For nine years the orchard has been in clover.

Two years ago last June a terrible windstorm passed over this section that blew down one hundred and twenty-two of the trees and blew off every apple on the trees left standing.

I have seen a good many orchards in America and Europe, but never saw an apple orchard that averaged as well as this. The trees are about in their prime, and are generally healthy, thrifty, with the limbs bending with their load of large, fair, perfect fruit. Yellow Transparent, of which there are twenty-four trees, had all been marketed before my visit. Two hundred and fifty dollars' worth of fruit had already been sold and the crop remaining is estimated at 1,200 to 1,500 bushels.

From fifty to two hundred trees each of the following varieties were planted in addition to the Yellow Transparent mentioned above, and are esteemed by Mr. Williams nearly as in the order named, with Yellow Transparent near the head: Northwestern Greening, York Imperial, Indiana Favorite, Wealthy, Salome, Grimes' Golden, Roman Stem, Smith's Cider, Ben Davis, Pewaukee, Rome Beauty, Northern Spy, Winesap and Cranberry Pippin. Comparatively few varieties were planted. Many that were omitted might have been found profitable.

Mr. Williams attributes his success this year mainly to spraying liberally. The orchard was gone over thoroughly three times and a part of it the fourth. A few trees near a line fence could not be reached on one side with the spray and the difference on the sprayed and the unsprayed portions was very marked, the fruit that was not sprayed being small, scabby, ill-shaped and wormy, while the portion of the same tree fully reached by the spray was large, bright and perfect. The entire cost of material and labor in spraying was about \$40, the difference between splendid success and almost utter failure.

Mr. Williams had found the Northwestern Greening a failure in former years, not one apple in ten being fit for market, while this year nearly every apple was fine. There are two other features in which the value of spraying is manifest. Grimes' Golden, Wealthy and some others usually drop much of the fruit before picking time, which is a great loss. In this sprayed orchard there was very little dropped fruit—the fruit hanging well and the foliage remaining quite green until the sharp October frosts, while in nearby orchards not sprayed the fruit and leaves had largely fallen weeks earlier. This feature—the retention of foliage and fruit—applies to pears as well as apples, as in this orchard Kieffer pears were fair and free from blemish, and the foliage green and fresh until late fall, while in a Kieffer orchard not far off both fruit and foliage dropped early, the former so rusty and knotty as to be almost worthless.

I think quite likely thorough spraying would prevent the early dropping of the fruit of the Vandevere Pippin and Rhode Island Greening, once so popular here, and restore these old-time favorites to profit again.

The other feature noticed by me was the almost entire absence of twig blight, so destructive in many orchards, and especially liable to attack

Yellow Transparent. In the trees of this variety I could only find one small twig on one tree that was affected.

As I said before, this orchard has been for about nine years in clover. The clover is cut twice each summer and left on the ground as a mulch. Whenever patches of clover fail from any cause these spots are stirred with a harrow in the spring and reseeded, so as to keep up a good growth. The clover crop is thought to benefit the trees, as well as keep up the fertility of the soil.

The estimated yield of this orchard at the time of my visit was 1,200 to 1,500 bushels of apples. The actual crop gathered was about 2,000 bushels of select fruit and 500 bushels of culls and windfalls, which were made into cider. The sales have amounted to a little more than \$1,400.

York Imperials from this orchard, shown at the St. Louis World's Fair, were finer specimens of this variety than those from any other State in the Union. There are thousands of acres of land in this part of Indiana as well adapted to apple growing as is the Williams farm.

To Mr. Williams also belongs the credit of rescuing from oblivion the Taylor's Prolific blackberry, the same having originated in his father's garden, and Sam, when a boy, saved the little seedling, thinking it was a peach tree.

President Stevens: Has anyone a question or a thought to add to the subject?

Sylvester Johnson: I have no questions to ask, but I should like to say a few words in regard to the bright boy that has just read the paper. He will make a horticulturist some of these days. I must say that the paper was well read, and I am sure that this boy takes an interest in horticulture, and I wish we had more boys and more young men in our country like him. We should make an effort to get more into our Society. I think that the paper which this young man read, and also the one which Mr. Teas read were very practical and interesting, and I am sure when they are printed and read by others it will be of benefit to the people. I am a firm believer in spraying. As I have said a great many times in St. Louis when people have asked, "Where and how were these apples grown?" I replied "In Indiana by spraying thoroughly." We certainly did have a fine display of apples there, and most all had been sprayed. We did this by spraying. I am a firm believer in it, and have been for years. I think it is absolutely necessary. It took a long while to get people to believe that there was anything in it. They thought it was simply a fad, of which we have so many, but there are now very few fruit-growers but what believe in spraying. I believe in it firmly.

Mr. Lafuse: I would like for this young man to tell me what kind of poison he used in his spraying material.

Master Williams: We used Bordeaux mixture with Paris green. We used four ounces of Paris green to fifty gallons of water.

Prof. Troop: One thing that struck me in the paper of the young man, and it explains to me why he has an interest in fruit-growing, is this: Did you notice that he spoke of the orchard as "my orchard?" This is why he has an interest in growing apples.

Mr. Wheeler: I came in here on purpose to find out if I could not learn a great many things in regard to horticulture. I have found this out, that if we want to raise nice apples we must spray our trees. I was like some of my friends. I had been raising little, scrawny, knotty, worm-eaten apples. I bought a hand spray pump and tried that and met with very poor success with it, but I had a friend that had a big pump that was put on a wagon and he had been meeting with success. I likewise went and bought one of that kind. We have sprayed for five years, and in that five years we have always had apples. Our neighbors have not been spraying and the result is they have not had apples except of the kind I spoke of raising before I got my sprayer. Last year two of my neighbors, who live very close to me, asked to use my spray pump and I told them they might. When I would get through spraying they would come and get my pump and wagon and spray theirs, and the result was that each one of them raised good apples. If all the people in the neighborhood would spray I think we could exterminate these little pests a great deal better than one spraying by himself.

Mr. E. Y. Teas: I can say that when I visited Mr. Williams' orchard he had one hundred bushels of apples picked, and he did not have half a bushel of inferior ones. I never saw such a large per cent. of fine apples in my life as he raised.

Secretary Flick: Mr. Chairman, I had the pleasure of visiting this orchard. I think it was in October. I heard from intercourse with other horticulturists that this was a fine orchard. I was hunting fruit to exhibit at the World's Fair, and I visited the orchard, and I must say that I have scarcely ever seen as large percentage of marketable fruit in any orchard I have visited for years. I have seen more fruit on the trees, but I have not seen as great a proportion of marketable fruit. Ninety-five per cent. were of fine color, smooth and large. I have had some talk with Mr. Williams with regard to his orchard, and I find that his sixteen-acre orchard is on a ridge, which slopes in all directions, north, south, east and west, and that the trees were planted in about the usual way, but the trees were gotten from one of the best nurseries in the State, and of course they all proved true to name. This orchard received clean cultivation until the bearing age and then it was sowed down to clover, and it is still in clover. He keeps it in clover. Some of you may wonder how

he can do that. He told me whenever the clover begins to look thin on the ground he waits till the spring of the year, when the ground is nice and mellow, then he goes over it and sows the seed in the places where it is needed; goes over it twice with a sharp-toothed harrow, and gets a good set of clover.

President Stevens: Does he do that every year, Mr. Flick, or just every other year?

Mr. Williams: Every other year.

Mr. Flick: He does it whenever it begins to show that it is about to play out. He cuts the clover and weeds and other things that may come up, in June and leaves it on the ground as a mulch. He has, as he has told you, a very fine orchard. He believes in spraying. On one side of the tree where the fruit was sprayed it was perfect, and on the other side where it was not sprayed you could not find a perfect specimen. It was scrawny, wormy and all scabby. There was not any of this fruit fit for the market. I think it is not entirely due to the spraying, but due to the care of the orchard, the keeping of the grounds in condition, etc. The clover keeps the ground in a fine condition to support and feed the trees so that they are able to bear a fine crop. Clover will do that. He pastures his orchard with pigs frequently to pick up the fruit that is down. This is another benefit along the same line as spraying, as they eat the wormy fruit up and destroy the codling moth. I would like to say that I should like for every one in the State that has been discouraged in raising fruit to visit this orchard and see what can be done with proper treatment.

Mr. Evans: I am a stranger here, but I came for information. I am here to talk about spraying. I use the sprayer myself. But I have never heard what spraying is done for. What do we spray for?

A Delegate: We spray to kill or destroy the insect enemies and injurious diseases.

Mr. Evans: I spray just after the bloom falls. I do not spray when the trees are in blossom, for it would kill my neighbor's bees, and I don't want to injure my neighbor when not necessary. I should like for some one to tell me what varieties he would set out for a profitable commercial fruit orchard.

President Stevens: Mr. Williams, inasmuch as your orchard is under discussion, you may answer his question.

Mr. Williams: I spray to kill the codling moth, and I spray with Paris green.

President Stevens: When do you spray for codling moth?

Mr. Williams: Immediately after the bloom falls.

President Stevens: And then in ten days after that spray again?

Mr. Williams: Yes; in ten or fifteen days we spray again.

Mr. James Little: We ought to understand one thing. Now, suppose that your trees have been affected for a number of years with the fungi. You can't spray an orchard of that kind next spring and make it produce many fine apples that year. It will take some time to restore the condition. The trees have been starved, and the only way that you can get apples in an orchard of that kind is to commence and spray until you restore the health of the trees and make the foliage all right, and then your spraying will bring good results.

Mr. Thomas: My experience and observation is that we have to spray just as much for fungi as we do for the codling moth and other insects. I will say right here, Mr. Curculio and codling moth are separate and distinct insects altogether. If you want to produce nice apples, like Mr. Williams has on the exhibition table, you must have a healthy foliage on the tree or you can not produce them, because we can not grow these fine apples if they are affected with fungi. The first spraying should be done before the buds open. This is to kill the fungi. We spray them with the Bordeaux mixture alone. It is not necessary to use the Paris green for this spraying: After the petals have fallen spray again. I use four ounces of Paris green to fifty gallons of water, and I spray every ten days or oftener if my orchard needs it. You should spray with some kind of a spray pump that will throw the spray into the trees with force enough to reach every portion of the tree, and you will then get good foliage, and then the good apples will follow.

Mr. Swain: I would just like to ask Prof. Troop a question. What, in your opinion, is the advantage of spraying for curculio? I use a solution of Paris green about the time the buds are open. Does the curculio feed any at that time?

Prof. Troop: As far as my experience goes the only time that we can do any good is at that season of the year. I like the time the buds are opening, but you should use the Bordeaux mixture with the Paris green. You will kill more curculios then than if you wait until it commences to lay its eggs.

Mr. Swain: You would advise the use of Paris green pretty strong at this time, then, would you?

Prof. Troop: Yes, I certainly should, but at this time there is no danger of injuring the foliage. After the curculio begins to lay its eggs

it will not eat anything to speak of, and you can not kill very many at that time. It attends strictly to business when it begins to lay its eggs, and does not, seemingly, take any food.

Mr. Swain: Mr. Williams spoke of spraying immediately after the blossoms fell for the codling moth, and then again in ten days. In case there should come a heavy rain immediately after, would you advise spraying immediately?

Prof. Troop: I most assuredly should. Just as soon as it cleared up.

Mr. Evans: When do the curculios hatch out?

Prof. Troop: Are you speaking of the plum curculio?

Mr. Evans: Yes, sir.

Prof. Troop: We have some after the plums are set, and are as large as peas.

Mr. Evans: Do they lay their eggs on the outside of the plum?

Prof. Troop: Yes, sir; on the outside under the skin.

Mr. Evans: Then your theory is that they are stung when they are young?

Prof. Troop: It does not take very long after the blossoms fall for the plums to become as large as peas.

Mr. Evans: No, I know it doesn't take very long. Do they lay their eggs on the plum?

Prof. Troop: Yes, sir.

Mr. Evans: How long does it take them to hatch?

Prof. Troop: It depends on the weather; but, generally speaking, only a few days.

Mr. Evans: After that they sting the plum?

Prof. Troop: They cut a crescent-shaped hole and lay the egg in that.

Mr. Snodgrass: I want to ask a question of Mr. Troop. I am very much interested in these affairs, and I am asking simply for information. I want to know of Mr. Troop if it is dangerous to spray with Paris green when there are plenty of birds around. You of course realize

that birds are valuable—they are a great help in fighting the insects in the orchards—and I want to know if there is any danger of killing the birds by spraying for the cankerworm. The birds are likely to pick up the worms after they have eaten the poison. Are they likely in this way to get enough to kill themselves?

Prof. Troop: The birds have a way of discriminating. They will not eat a poisoned worm if they know it, and they generally know it.

Mr. Chas. R. Swaim: Some one has said that they are afraid they will kill their neighbors' bees. I would like to kill their bees. They are only worth ten or twelve dollars, and if they are let alone they will destroy hundreds of dollars' worth of fruit. They destroy the grapes and the Yellow Transparent apples. They can not get ripe on account of the bees. I have had my neighbors tell me that they wished I would not spray when their bees were coming over there. I always told them that they would have to keep their bees at home if they didn't want them to get killed, for when I got ready to spray I am going to spray, and I think we should all do that way. If you don't want your bees killed, keep them at home. I never heard of any bees being killed by spraying, anyhow. When I think the conditions are suitable to spray, I spray.

I have been in the chicken business for about twenty-five years, and if I wanted to kill my young trees I would put the chickens into the orchard. They will fix the trees if you don't cultivate the ground. They will pack it so that in a little while the trees will die. I have tried this to my sorrow.

Mr. Garretson: I have cankerworms and I used about one-fourth of a pound of Paris green to forty gallons of water, but it didn't seem to be sufficient, so I added one-half pound to fifty gallons of water, which was successful. Of course, when I make it stronger with Paris green I add more lime.

Walter Smith: In regard to the killing of the bees I am sorry to see the bees killed, and if you kill the bees you will not have apples, because they distribute the pollen. They are very important factors in the orchard, and in the strawberry patch and all kinds of fruit.

Prof. Troop: I want to ask Mr. Swaim what objection he has to bees, and why he likes to kill them?

Mr. Swaim: My theory is that you do not kill them when you spray. I never saw a dead bee after I sprayed.

Prof. Troop: That is not the question. What objection do you have to bees in the orchard?

Mr. Swaim: What objection do I have to bees? Why, none at all.

Prof. Troop: Then why do you want to kill them?

Mr. Swaim: I said that if I should kill them it was only a loss of about ten or twelve dollars of bees, and probably a hundred dollars' worth of fruit destroyed.

Prof. Troop: How do you know the bees destroy the fruit?

Mr. Swaim: I have eyes, I can stand there and see. I have seen them doing it.

Mr. Johnson: Bees never do anything like this.

Prof. Troop: Did you ever see a bee sting one of the grapes, or break the skin of the grape?

Mr. Swaim: Yes, sir; they were on them, and broke the skin and sucked the juice.

Prof. Troop: The skin was broken already.

Mr. Swaim: I did not mean to say that the bees broke the skin.

Prof. Troop: No, of course not. You are jumping at conclusions. Wasps will break the coat of the skin of the grape; likewise will the English sparrow, but all the bees do is to gather the juice and make honey out of it. You have never seen a bee cut the skin of a grape in your life, and never will.

Mr. Johnson: For the benefit of this gentleman, and for others present, I wish you would give your experience with bees along this line. Prof. Troop.

Prof. Troop: We are taking a great deal of time along about this, but I will tell you of this little experiment. A few years ago I tried the experiment just for my own satisfaction. I had a fine arbor of grapes, and I took a mosquito netting and stretched it on the fence around the grapes. I was very careful that I got everything out except the bees, before I made this enclosure. I left the bees inside there for three weeks. At the end of the three weeks I opened up the mosquito netting and let the bees out and I couldn't find a single grape that had been cut during the time the bees were in there. The bees didn't have anything else to eat, and they did not then bother the grapes. There was not a grape injured during the three weeks. Now, I know that people claim that bees destroy their grapes, but you can not find a man that will stand up and say he saw the bees cut the skin of the grape. I think the bees would be mighty poor chumps if they did not come along and gather up the juice after the skin is cut and the juice is running out and going to waste. Wasps will destroy grapes, but bees never. .

Mr. Johnson: Are they wasps or yellow jackets?

Prof. Troop: These are the same.

President Stevens: We must confine ourselves more closely to the subject under discussion. If anyone has any further remarks to make on this subject we would be glad to hear from them now.

Mr. Lafuse: I have had experience raising plums as well as raising apples. It seems to me that it is impossible to destroy the curculio by spraying. I have found that air-slacked lime mixed with wood ashes, applied in the morning before the dampness of the dew is off of the trees is more successful than spraying.

In spraying for the codling moth I would say that I spray before the leaves are on the trees with the Bordeaux mixture, and as soon as the apples begin to form I spray again. The best stuff I have ever used is Green's arsenoid, which is made in Cincinnati. It will stay on the foliage three times as long as the solution from Paris green, and I think it is more effective.

This gentlemen spoke about the fruit all being stung by insects. I noticed this year that early in the season the insects were very scarce. I remember that we had a cold, chilly spring, and that the insects were very scarce. Along in the summer when it began to get warmer they began to get very numerous. They came along in June and spoiled the apples after they were seemingly set on the trees. How late would you recommend spraying, Mr. Troop?

Prof. Troop: Until about the 20th of June.

Mr. Henby: I should like to ask Mr. Williams one question, and that is this: My understanding was that the apple crop in our location, and all over the State, was only about fifteen per cent. of the usual apple crop. I should just like to ask Mr. Williams as to the per cent. of apples he got from his trees compared to the prospect of growth early in the spring. Now, we attributed our loss of the apple crop to the cold weather, extreme cold weather, during the blooming season. We thought we had a hundred per cent. of blooms. It seemed to us that we had the best prospect for a crop we ever had, and we didn't have over fifteen or twenty per cent. of a crop. So it seems to me that we certainly could not have saved our crop by spraying this season.

Mr. Williams: I will say that we had a heavy bloom, and we also had apples, but I think the spraying saved nearly every apple that set on the tree. I think I should attribute this to the spraying.

Mr. Henby: What per cent. did you have compared with the bloom, supposing you had one hundred per cent. of bloom?

Mr. Williams: Well, we had about seventy-five per cent. of bloom.

President Stevens: Did your trees have all the crop you thought they ought to have to have perfectly fine fruit?

Mr. Williams: Yes, sir.

President Stevens: Then I should say that you had one hundred per cent. of fruit, because you had a full crop, and if you had had more you would have very likely thinned the fruit. So I should say that you had one hundred per cent. of bloom, and one hundred per cent. of fruit.

Mr. Williams: Yes, I think that is right.

Mr. Thomas: I should like to emphasize the proposition in regard to spraying for fungi. I have in mind an orchard one-half mile from where I live. It was very full of blossoms, but this fall when it came to gathering the fruit there were very few apples in the orchard except the Ben Davis, and they were pretty badly scabbed from the fungi. I have in mind a spring a few years ago when we had a bloom for a bountiful crop of apples. When the apples began to form the leaves dropped off, and at the last of June the leaves were nearly all off on account of this fungi. As I have said, they were very full of bloom, but the fruit dropped off. When the fungus got on the stem of an apple it would drop off in three days. By September all of the leaves were off the trees and I feel quite confident that it was on account of the work of the fungi.

Mr. Simpson: I would like to make a remark about the fungi. This year I think there was a fair crop of apples in our orchard. Those that were not sprayed when in bloom, just as the fungi was coming on, all fell off. The apple would seem to be firmly set, too. I sent a number of these apples to different places to find the reason why they should fall, and it was reported that it was on account of the apple scab fungi. In a case like this I think we would be justified in spraying when the apples are in bloom. Sometimes when we spray when the trees are in full bloom we get the best results. We are sometimes asked not to do this on account of the other man's bees.

President Stevens: I suppose we have given all the time we can to the discussion of this topic. We have quite a lengthy program, as you will see by glancing over it. There are some other matters that we should take up here. I am now going to call for the reports from the Horticultural Committee from the various districts. Is the report ready from the First District? If this is not present, is the report ready from the Second District? From the Third District?

Mr. Reed: I have a report made out, but I left it at home. I did not notice this until I got here. I can send it to the Secretary.

President Stevens: All right. Third District.

Mr. Lindley: I have a report made out, but I hardly think it is full enough, so I wish to retain my report at this time and add more to it.

President Stevens: I will ask if there are any of the Committee on Horticulture here? Are there any ready to report at this time?

A. W. Shoemaker, of District No. 8: We can not report much in the way of fruit, as this section is not in the fruit growing district. The land may be adapted to it, but we have not discovered that it is. We are not doing much as far as apple growing commercially is concerned.

REPORT FROM EIGHTH DISTRICT.

Lying, as it does midway between the northern and southern apple belts of Indiana and in one of the best corn growing sections of the State, but scant attention is paid in this district to fruit growing, save by a very few. The apple orchards of the early settlers, which in their day bore abundantly of such old-time favorites as Vandever Pippin, Rambo, Belleflower, Smith's Cider, etc., have mostly disappeared or the site is marked by a few straggling trees which seldom bear and are unprofitable and unsightly. New orchards have been put out on many farms, 'tis true, to supply the home, but very seldom is there a man with sufficient courage to attempt a commercial orchard, and they of small dimensions. There is apparently a very general lack of knowledge among farmers of the way to establish and maintain an orchard.

Some, in fact the majority, who attempt to set out fruit trees are induced to do so by the fruit tree agent. In the interest that he creates and attention called to planting trees the agent may in some sense be a benefactor, but in general he is a much greater curse than a benefactor. He comes to the unsuspecting farmer and with oily tongue expostulates upon the superior merits of his whole root or piece-grafted trees, and with highly colored pictures of new, hardy and wonderfully prolific varieties, excites his wonder and interest. His mouth fairly waters at the recital and prospect of raising such fruit, and while under the influence of the spell the farmer orders a bill of trees from the smooth rascal, which is filled with the cheapest trees he can buy from some convenient nurseryman, the trees being labeled to suit the order. The price is usually ridiculously high, often being three to four times the ordinary prices of honest and reliable nurserymen. The agent lures his victim into this deal by deferring a small payment for a year, by throwing in several plants or trees, or contracting to replace all that die, etc.

You know the consequences if the farmer should care for these trees during the tedious years from planting to bearing when he finds to his disappointment and disgust that many of his trees are worthless. He thinks the time and chances of reaping rewards from his labor too remote to begin again and plant an orchard of reliable trees. This experiment has been too costly.

Besides the extravagant price paid for trees, he has no reward for his labor and no profit from the land for many years, and he turns from fruit culture in disgust to raising hogs and corn and occasionally buys a peck of apples from the neighboring store to treat the children. This may be an extreme case, for most farms produce a few apples of poor quality on account of the unchecked ravages of insect pests, but a very small portion produce all that could or should be used in the home.

What few bearing orchards there are are uncultivated and unsprayed and generations of codling moth and cankerworms increase their foul breed without let or hindrance. In the township in which I live I know of no one save the writer who practices spraying. There may be a few in the county, but am reasonably certain that they might be counted on the fingers of one hand. Many apple orchards are so infested with cankerworms that in early June the leaves have the appearance of being burned with fire and the apple that escapes the codling moth is seldom seen.

The amount of pears, plums and small fruits produced in the aggregate in this district, however, appears to be increasing, judging from the frequent glutting of markets in the seasons of these fruits.

There are no commercial orchards of any size in the district; a very few, perhaps, of 10 or 12 acres in extent.

In our county three local societies are maintained. These societies, however, are more occupied with general farm topics than horticulture. However, the sections where these meetings are held are more advanced in horticulture than any other. More and better orchards are found there. As to causes of the poor conditions of orchards in the district, I would name:

First. Lack of knowledge how to plant and care for an orchard.

Second. Lack of time by the general farmer to plant, spray, etc., at the time when this must be done.

Third. Lack of knowledge of what varieties to plant and where to get the trees of reliable men, many who have had experience with tree agents thinking the whole tree business a swindle.

There is need of education along all of these lines through the press and local societies, wherever such can be organized and maintained.

Mr. Thomas: I have a small report from our district. Our district is agricultural in the fullest sense of the term. The farmers are engaged in diversified farming, specializing mostly on corn and hogs, some on

cattle, and a few on sheep. There are very few that pay much attention to the cultivation of fruits of any kind. It has been my good fortune to travel over a great portion of Grant, Miami and Wabash counties in a buggy the past summer and fall, and my observations lead me to believe that there are but few farmers who give much care or attention to their orchards, or the cultivation of fruit of any kind. The apple crop for the last few years in our part of the State has been so uncertain that the farmers have become discouraged and are not planting trees to take the place of those that are dying, neither giving the care to the trees they have that their wants require, corn and hogs being their money crop, while their orchards are left to the care of nature.

The time has been when there was an abundance of humus in the soil to retain moisture, and plant food for the building up of a healthy, vigorous tree and foliage capable of resisting the attacks of insect pests and the diseases to which so many trees succumb in their weakened condition when left to the care of nature. When a tree is planted it is there to stay the remainder of its life. If the food it requires is not sufficient for its wants it makes a poor, weakly growth and is not in condition to bear good crops of nice, luscious fruit. An apple tree is a factory for the manufacture of apples. Every root, fiber and leaf are the workmen that operate the factory, and all they require is plenty of raw material placed within their reach and a little protection from the ravages of insect pest and fungi, and they will turn out the finished product.

That apples can be made profitable in our part of the State, I think there can be no doubt, if the farmer will give the care and attention to his orchard that he gives to some of his other products. What man has done man can do again. Notwithstanding the apple crop this season in our immediate locality was almost a failure, Mr. Jacob Fishel informed me that he has sold over one hundred dollars' worth of apples from his orchard of an acre and one-half twelve years from planting, which certainly is better than corn and hogs.

I have wandered from my subject of a report of horticultural interests in our district. We have two societies, one in Huntington County and one in Grant. There is not as much interest taken in our society as there was a few years ago, some of our most active members having identified themselves with the Patrons of Husbandry, which meets twice a month on Saturday, and they feel that another Saturday to the society is taking too much of their time.

Farmers, I think, are planting more ornamental shrubs and plants and otherwise beautifying their home surroundings.

There has been some work done along the line of beautifying country school grounds, principally by the school children planting our native trees, and I do not think that there was one out of ten planted that lived through the first summer. I think the planting of school grounds should be done under the supervision of the township trustee, or some party competent to direct such work.

Secretary Flick: I have a few announcements which I should like to make at this time. There is to be an informal reception and social held here tonight in this room, to which all are invited. You are at liberty to invite your friends. There will be some light refreshments served. I think possibly it would be well to have a Committee on Introduction, so I will appoint John W. Apple, J. C. Grossman, Prof. Troop and Mrs. W. B. Flick.

I wish also to say that the Secretary is now ready to receive your names and your fees for the coming year. Under the Constitution of our Society the membership expires on the 31st day of October of each year, so of course you are now delinquent. I shall be glad to enroll anyone. I think you understand the terms.

We might state that those who have reports, or will have reports by tomorrow, will find a place for them on the program and can offer them at that time. If we have the time I suppose we will have them read. If not, I suppose they will be placed in the hands of the Secretary for publication.

President Stevens: As this finishes our program for today, we will now stand adjourned until 7:30 this evening.

EVENING SESSION.

President Stevens: Ladies and gentlemen, we will have to change our program this evening on account of the absence of Col. John P. Logan, of Arkansas, who was to have been with us this evening and speak on "Profits and Pleasures of Fruit-Growing." Of course, we do not know what has detained Colonel Logan. He promised to be here, and was anxious to meet this Society at this time. Possibly the lateness of the trains has made it impossible for him to reach us for this evening's program. Possibly he will be here later, but we can't wait longer.

We have with us tonight Mr. Burton, whose paper was omitted this afternoon, so we will have first Joe A. Burton's report as Superintendent of the Experimental Orchard.

Joe A. Burton: Mr. President, ladies and gentlemen, I tried to be here on time, but our engineer took a notion that we could not run over a freight train which had balked, and we stayed back of it, and this put us in late.

My report is not long enough to occupy the time expected to have been taken by Colonel Logan, but possibly Brother Zion and a few others can express their opinions tonight, and we may occupy the time in the discussion of some of my statements.

REPORT ON EXPERIMENTAL ORCHARD.

JOE A. BURTON, SUPERINTENDENT.

The orchard is now enclosed by a substantial wire fence. The longitudinal wires, ten in number, are No. 9 coiled spring, save bottom one, which is a barb. These have a drawn tension of two rods on each side of the orchard. The stay wires, every three feet, are soft No. 9. The posts are cedar and corner posts encased in Portland cement. Around all is a poultry netting 30 inches high to make the fence rabbit proof. This part, however, is a failure. The groundhogs seem averse to climbing this fence, so they make creep holes wherever they want to pass. I counted thirty-nine creep-holes made since September 1st. This fence cost \$245.73, and was paid for by the State.

But few apple seeds were planted last spring, and none came up.

The following pedigreed trees were top worked:

Winesap, pollenized by Grimes; Winesap, pollenized by Rome Beauty; Winesap, pollenized by Ben Davis; Ben Davis, pollenized by Rome Beauty; Ben Davis, pollenized by Grimes; Benoni, pollenized by Early Harvest; Benoni, pollenized by Chenango; Benoni, pollenized by Trenton Early; Benoni, pollenized by Yellow Transparent; four trees by Grimes inbred.

The following top-worked with scions from Stark Bros., Louisiana, Mo.: One tree with Bay; one tree with E. 5; one tree with Z. 26; one tree, Black Ben Davis.

The following from Albertson & Hobbs, Bridgeport: One tree, with Celestia; one tree with Dickey; one tree with Whitney Russet.

In experiments we get some results. One tree top-worked with Ben Davis from bearing tree and nursery stock propagated from nursery stock for many years, has borne. No difference in the bearing. This, however, is not a fair test. Tree bore prematurely on account of girdling by label wires.

The following to determine whether the stock has any influence on the nature of the fruit we regard as conclusive, and will not follow it further. It is a repetition of the test as given in 1902. Yellow Transparent was grafted on Wild Crab and the apples grown with all Transparent leaves removed. The apples were nourished with food prepared by crab leaves alone. Two very fine Transparents were grown, and when ripe one was tested by Prof. Troop and Mrs. W. W. Stevens, of the committee in charge of the orchard, assisted by Mr. Emery Albertson. They pronounced it a true Yellow Transparent. The other was sent to Prof. Taft at the World's Fair and by him and other experts there pronounced a true Yellow Transparent. Prof. Taft ventured the statement that "to raise a baby on goat's milk would not make it part goat."

Another was to test the variation of varieties. Prof. Bailey tells us that every bud is a new creation. That everything is different. That a so-called sport is no mystery; just a bud varying a little more than the others. It is quite probable he had better withdraw this statement for the present. The dawn of stern facts indicate that a variety can change only by a new creation through the seed or a sport. Once a Ben Davis always a Ben Davis. The observed variations in varieties is probably due to environment, and when the environments become the same, the variations will not show. We grafted scions from a Ben Davis bearing extremely red apples into one bearing light-colored apples. No difference in color could be observed.

FINANCIAL STATEMENT.

Old rails sold	\$41 00	
Wheat sold	41 20	
		\$85 20
Paid for safe	\$25 00	
12 apple trees from Virginia.....	3 10	
1 bushel clover seed.....	6 00	
		34 10
Balance in treasury		\$51 10

President Stevens: Has anyone a question to ask Mr. Burton in relation to the Experimental Orchard?

A Member: I should like to ask Mr. Burton when he gets trees from cross-breeding, which tree they most resemble. Suppose it is the Ben Davis and the Grimes Golden. Which one will they most resemble?

Mr. Burton: We have not reached such results yet. The first time we tried this we only knew the parent on the mother's side. We tried four sweet apples this season, but even then we only knew the parent on the mother's side. One of these trees had some apples, but they dropped, as they were not sprayed. Some of the apples reached maturity, and this tree was from the Ben Davis side, but if you would stand a few steps away it would look like a Grimes Golden. We felt sure it must be a cross between the two. I watched impatiently to see about this, and one day I was passing and saw an apple on the ground and hurried to get it and taste it, and it was a sweet apple. Of course, my faith fell, because we didn't feel that a sweet apple was of much importance. I do not know what variety it was. We have only two pedigreed trees. This is the Jenett and the Ben Davis. The father side is the Ben

Davis. They have not come into bearing as yet. We expect them to bear considerable next season. The cultivation of these trees was neglected this year in order to force them into bearing. Perhaps this was a bad move, and we should have grown them another year and had them larger. You know we get so anxious along this line that we can not wait.

Mr. Zion: Why not adopt the method of spraying down there? Even in the Experimental Orchard?

Mr. Burton: We have no missionaries down there.

Mr. Little: How do you manage to fertilize the Ben Davis with the Jenett when they are so far different in time of blooming?

Mr. Burton: By a little care you can find a blossom of one overlapping the blossom time of the other. In this case the pollen was saved from the Ben Davis and kept in glass cans for a week. We had the pollen stored away for a whole week before the Jenett came into bloom. Some seasons they bloom so close together that there is no difficulty at all. You can save the pollen. I kept some from a wild crab for nearly two weeks.

Mr. Ratliff: Wouldn't you think it would be better to graft some of the tender varieties of apples on the crab stock, such as Yellow Transparent and Grimes Golden, rather than on the Ben Davis stock?

Mr. Burton: I do not think the wild crab is nearly as hardy as the Ben Davis. I would rather have the Ben Davis. I think the other is more subject to disease.

Mr. Ratliff: I mean any of the crab apples.

Mr. Burton: I do not think any of the crab apples will grow as fast as the larger apples. The tree will not grow as fast.

President Stevens: Does anyone else have a question?

Mr. Little: I visited an orchard not long ago, in the northern part of the State, and the owner told me that every tree in the orchard was raised from Rambo seeds. I went over the orchard and every single tree in that orchard had a Rambo tendency, or favored in some way the Rambo. Some of the best sweet apples I ever tasted were in that orchard, and the tree was very large and resembled a Rambo.

Walter Smith: May I ask in grafting Grimes Golden in the other stock, is there any advantage in grafting on the body a distance from the ground?

Mr. Burton: We are growing them that way in the Burton Fruit Company's orchard. We are putting out an orchard on what was formerly my own place. We have a thousand trees of Grimes Golden, all top worked on Northwestern Greenings. There are a number of hardy stocks. We do not have very much trouble with the Grimes like they do in the North. There may not be much benefit in the top worked tree, but you possibly then escape the bark diseases. I think it is quite well worth the trouble of taking the chance.

Walter Smith: Is there any way of dealing with the disease?

Mr. Burton: I never have heard of any. The first thing you notice is a deadening of the bark next the surface of the ground and before you know it the tree is dead. I would like for these people to look over their statements in regard to the variation of varieties: There are three or four kinds of Ben Davis, according to them. I would like to hear something from them here. Our experiments are not conclusive along the line, but from them there seems to be no such thing as a variation of varieties. We might say a great deal about it, but we will test it more.

Walter Smith: What do you mean by the Black Ben Davis?

Mr. Burton: It is a separate apple.

Mr. Smith: Do you mean it is not a Ben Davis at all?

Mr. Burton: Not one of the ordinary variety.

Mr. Smith: What about the New York Pippin?

Mr. Burton: That name is local and is due to environment, I think.

Mr. Smith: Isn't it a Ben Davis?

Mr. Burton: Yes, sir; but they will outsell the Ben Davis.

Mr. Smith: Isn't it a larger apple than the Ben Davis?

Mr. Burton: It is simply a Ben Davis, but for those who will not buy a Ben Davis it is a New York Pippin.

President Stevens: Did I understand you to mean that there is no difference in the texture of the apple, or the quality of any variety grown on different soils under different conditions?

Mr. Burton: No, sir; I will say that there is not a particle of difference. Ben Davis grown on one soil might seem to be a different apple from Ben Davis grown on a different soil. That is all.

There is no change of variety, it is simply due to environment. I have hardly made a fair investigation along these lines, but this is the way I think now. The difference in the Ben Davis, here and there, is due to the immediate surroundings. The stock does not in the least change the nature of the Yellow Transparent, and I shouldn't think it would change the quality of the Ben Davis. We have a number of varieties being tested along on this line. One of these trees was brought into bearing quicker because the wire on the label had cut into it.

President Stevens: Are there any other questions?

Mr. Lafuse: If it will not be influenced by the stock on which it is grafted, I want to know whether it would not be probable that that would be the way to improve our fruit, to select scions from trees that we know bore superior fruit? Some years ago we had a half dozen Rambos in our orchard, and one of the trees, in particular, bore fruit almost double the size of the other, and they were soft and juicy, while the others seemed to be hard, and not so palatable.

Mr. Smith: I have a case in point also. A man in Hancock County grafted a quince into a pear, and a pear into a quince, and a quince into a pear again for six consecutive graftings, and the twig bore quinces to all intents and purposes, so far as shape was concerned, but the fruit was perfectly dry, with no resemblance whatever to either the quince or the pear.

President Stevens: That is contrary to your experiments, isn't it, Mr. Burton?

Mr. Burton: My idea is that the root or stock is the same to the fruit as the wagon that delivers the wheat to the mill is to the flour. If the wagon brings wheat of a good quality to the mill, the mill will make good flour. If it brings an inferior quality there will be inferior flour, and not much of it. The stock does nothing but nourish the fruit. Of course, it must do that. If the root furnishes more food, of course the apples will be larger. An apple will not grow without food. If a tree will not supply it, it will die. In regard to a tree being grafted, and grafted and grafted, it can not get much nourishment there.

Mr. Little: We have always been taught by experience that fruits are very closely allied, but the idea of pears growing on hickory or walnut trees is a new one to me. I can not believe it. Several years ago a neighbor told me he saw a black haw growing on an apple. I said that he must be mistaken, for I knew it could hardly be true. He knew it must be true, for he knew the man that grafted it, and all about it. I did not believe it, although the man was a very truthful man. We agreed to go and see it, and we did go, for I didn't have faith in his word. I

went to see the black haw that was growing on an apple tree. There happened to be a scrubby, seedling pear growing there, and it was a pear instead of a black haw, and it was not an apple at all. I knew it could not be possible, and I think if you will sift this matter down it will be just the same way.

Mr. Teas: In Mr. Burton's case the Grimes Golden produced a sweet fruit, and in that particular case I believe the root had as much to do with the fruit as any other part of the tree.

President Stevens: It seems that your experiments, Mr. Burton, are not yet complete.

Mr. Burton: No, but facts point our way. I think they are complete as far as the influence of the root is concerned. As I said before, the wagon brings bad wheat to the market and the miller makes bad flour, but that is no fault of the wagon's. We have not given this question close enough study. I do not believe the Creator made things in this way.

Mr. Ratliff: I would like to know, Mr. Burton, if grafting any variety on a seedling stock would be just as well as grafting on a more hardy variety whose ripening season corresponds with that of the scion? Wouldn't it be better to graft into the larger, stronger varieties with this point in view? It has been advocated by some that varieties that mature near the same time should be grafted together. Summer varieties should be grafted to stocks that mature during the summer, and autumn varieties to those that mature in the autumn, etc. I should like to know if you have conducted any experiments along this direction, and, if so, what has been the result.

Mr. Burton: Now, we grafted Yellow Transparent on Wild Crab in the proper season, and they have developed very fine Yellow Transparents. Prof. Troop will bear evidence to this. If Mr. Ratcliff's questions were to be answered in the affirmative we would have to do things quite differently from what we do now. If this were true we would have queer orchards.

Mr. Lafuse: I think the variation of varieties from seed comes from the pollenization at the time of blooming. When you plant a seed you have influences at work which were never there before.

Mr. Burton: I can not say, but I do think it has an influence. When you cross pollenize apples I can not see that they are larger or smaller. Take a Winesap, for instance. That is an apple that varies the least in appearance of any of them. This must be pollenized by something else, because it is generally conceded that it has no pollen. I have hunted for hours and hours to find some, but I have never succeeded as yet.

President Stevens: That is all the time we can give to this discussion. We will now take up the next subject on the program, which is "Observations and Experiences at the World's Fair," by Mrs. W. W. Stevens.

Secretary Flick: Mrs. Stevens is unable to be here tonight, but she has kindly sent her paper and I have requested Mr. Grossman to read it for her.

Mr. Grossman: Mr. President, Ladies and Gentlemen—I rather hesitated in taking Mrs. Stevens' place here tonight, as it seems to me it is presuming for me to attempt to read her paper, because you all know from past experiences what enthusiasm she puts into her papers when she delivers them, and I can not give the expression that the writer would give, but if you will bear with me I will do the best I can.

EXPERIENCES AND OBSERVATIONS AT WORLD'S FAIR.

My experiences and observations at World's Fair extended over fourteen weeks, divided into three periods, viz: The opening, part of July and the whole of August, and the closing. To say that this was a pleasant experience does not half way express it, for it was simply a grand, glorious experience from opening to closing. There was no feature of it that was not full of valuable lessons as well as pleasures. There was not a civilized nation on the globe that was not there, and fitly represented. There seemed to be no trade, calling or profession whose followers were not seeking recognition and clamoring for room, and no form of amusement without its votaries by the score. The beautiful grounds with its thousands of flower beds, blooming shrubs, water gardens and statuary was a sight of such magnificence that one should have felt repaid for the trip, if there had been nothing else to see. The "palaces" were each of them an exposition within themselves and contained an exhaustive display of all interests connected in any way with their line of work. The study and comparison of the peoples of the world, their manners and customs was one of the striking features to me. But when one combines all these things it makes such a stupendous whole that one mind can not grasp it all, and the best that can be done is to take it as a precious jewel in a beautiful setting. After one gets home the noise has left their ears, the glamour their eyes, and they have time for sober reflection, then and not until then can they classify their knowledge and find what they have really learned.

I take it that our Program Committee has aimed all these "experiences and observations" to have a trend towards horticulture. It is very unfortunate to prepare a paper just now and for this body, because so many of you have visited the fair and have seen what I have in a general way, and because there is no way that I can give anything definite or in detail

as to awards, number of entries made, or in fact any actual information along this line. The Palace of Horticulture was a very pretty building, adequate in every way and exquisitely arranged for the display of fruits. It was very unfortunately located, being quite away from the popular thoroughfares, on Agricultural Hill. Early in the season this was thought to be a serious drawback by our horticulturists, but later it proved not so bad after all. Those who really cared to see and study fruits came anyway, and the rabble or "pikers" would have only been in the way and a mild nuisance if they had come. On May 1st, "Opening Day," pandemonium reigned supreme. Hammers and saws, orders and counter-orders, the shrieks of engines outside the buildings, with the rumbling of trucks over floors on the inside, the shrill screech of the venders of wares, the hoarse "barkers" beginning the "bark" that never ceased during the entire fair, and the innumerable foreigners who were wildly gesticulating and frantically trying to make themselves understood, all this made the day one long to be remembered. At 10:30 o'clock all was quiet. The order had gone forth from headquarters the day before that at this time all work should be stopped, all goods must be within the exhibition space allotted to exhibitors. The fair was duly opened with imposing ceremonies. On looking around one saw chaos. Everything seemed at first to be without form and void. The visitor asked "Is everything ready?" The exhibitors echoed the question. After a while an official of the Government Building very proudly answered, "Yes, Uncle Sam is ready." Then in a still, small voice a Hoosier piped out, "Yes, Indiana horticulture is fully ripe and ready." And, sure enough, there was Indiana with four other States in first-class shape, in which condition she stayed for seven months. I observed that the casual visitor looked with sympathy, disdain or indifference on our display because we had no array of tall bottles containing large or freak fruits; no glitter of plate-glass mirrors and no cases of "wax fruits." Hundreds of people told us that they had much better fruit at home than was on exhibition, to which we replied that our fruit was the very best that was grown by those who had freely contributed it, and we always asked our criticising friends to send us some of their finest, but they never did it. I observed very closely, indeed, the exhibits of our sister States, and want to say right here that no one had as creditable a display for the money invested as Indiana. Some of the States had fifty to seventy-five thousand dollars to Indiana's five thousand. Most of them had attendants who were experts in exposition affairs, who received good salaries, while our attendants were just plain fruit growers, who gave their time to the work because they loved their business and were anxious to show their loyalty to their State.

Our exhibit was nicely located near the center of the Palace, and our near neighbors were Missouri, Iowa, Nebraska, Arkansas and Wisconsin, and no better, more obliging neighbors ever lived. One of the pleasant

features of the show was the hundreds of acquaintances made. During the hot days of midsummer, possibly we looked a little bit shabby, but on the whole no loyal Hoosier could help but be proud of the exhibit.

I have no notes before me at this writing, but from memory will say that of all the apples taken from cold storage the Salome' kept longest and looked finest, and the Wagner did poorest. In fact, I don't think that we had but few plates of the latter that were fit to put before the judges at all, and they lasted but a few days. Our Ben Davis were quite badly scalded in many packages, as were many of the Jenetts. One barrel of very fine Rhode Island Greenings acted rather queer. On unwrapping them they looked first-class, but in a few hours they began to burst and the noise of the explosion could be heard several feet away, and in twenty-four hours there was not an unburst apple in the entire barrel. A very noticeable feature of the entire exhibit was the great variation of certain varieties of apples. For instance, the Ben Davis of some States looked so different from the same variety in other States that one could hardly believe them to be the same. But every grower acknowledged them to be some better than no apple at all. In fact, I gave one young girl a Grimes, a Winesap and a Ben Davis, and she asked for the second Ben Davis in preference to one of the others. Hundreds of elderly people stopped at our booth and asked to just look once more at a Yellow Bellflower, Rambo or Milam that had grown in Indiana; but, alas, we had but very few of the first two and not one single entry of Milams. It was surprising to know how many visitors were at the fair from our State, and how many were born in the State and now live somewhere else. In either case they were delighted to see our exhibit. The men and women of fifty or more years would almost always ask after the Bellflower and if I believed what they said about their grandfather's trees of this variety, these trees were sixty feet tall, four feet through, bore every year apples of the most delicious quality, beautifully colored and in size anywhere from a quart cup to an ordinary watermelon. Truly it is wonderful what a hold on the memories and affections of people grandpa's Bellflower tree has. Can't some one renew or resuscitate this old favorite before another world's fair?

When at all practical we aimed to give an apple to every Hoosier who called at the booth and it was wonderful the number of people who at one time or another had lived in Indiana. In fact I was "worked" a number of times before I learned that every one who asked for an apple was not an honest Hoosier, but for fear of "entertaining angels unawares" I gave when I could to all who asked and the State has not suffered for it.

When the awards are published Indiana may not take the lion's share, but she will be well up in the line.

President Stevens: In connection with this paper we have some others. The first one will be by Joe M. Burton.

OBSERVATIONS AND EXPERIENCES AT THE WORLD'S FAIR.

What attracted my attention most was what was not there. I expected to find hundreds of varieties of apples. I was aware of the large number catalogued. I expected to find these, and many more on exhibition. As I went from State to State it was Ben Davis, Rome Beauty, Winesap, Grimes, Jonathan, Baldwin, Northern Spy, Arkansas Black, Mammoth Black Twig, Wealthy, Genet, and in a few States Northwestern Greening and Albemarle. Outside of these, all might have been hauled on a market wagon. It is not hard to know what are the business apples of the world.

It was July 1 when I went to the Fair. Of course the apples on exhibition had been kept in cold storage. Their behavior there and when put on display was an item of great interest. It was quite observable that apples picked and stored before fully ripe did not behave well. A barrel of Genets from the north part of the State picked quite green, were still green and without flavor. None had rotted, but when placed on exhibition all had scalded, or rotted inside one week. Genets from my own orchard, fully matured when picked, had been on the plates one month when I took charge and were still sound when I left, three weeks later. Grimes from my own orchard, picked a little green and sent immediately to cold storage, never colored up nor developed flavor. Many were scalded when opened and all gave down in less than a week. Grimes from the north part of the State that had evidently colored up before packing were in fine condition, both as to color and flavor and stood up on the table for over two weeks. How do I know they were colored up before packed? I know it from their associates in the box. It is probable that Jonathan is the best of the good flavored apples for cold storage. I did not see one that was scalded, nor taste one that had lost flavor.

The State displays were not all equally meritorious. I hope Indiana's poorest display was while I was there. To say that I felt humiliated is putting it very mildly. Several of the packages I opened would not have graded No. 2 when packed. These had to be opened before a gazing public, and I could not do as our Iowa neighbors did when they opened an undesirable package, wheel it away to the dump. They had plenty, we few to draw from. We had to fill our tables with such as we had. Other States had put competent men into the field to hunt up and store good apples. They got them. We depended on the voluntary contributions of our citizens. We didn't get them.

One day when I was probably worried I observed that I imagined that I felt like there was a little possibility, though of course improbable, that there was a little danger that all horticulturists were not angels. Just then my wife wanted me to go with her to see the Igorrotes, and I went.

These unnatural observations were superseded by natural sights. Realizing the disquieting effect of such observations, I devoted my spare time to saving apple seeds for the experimental orchard. These might result in bringing blessings to the future horticulturists.

President Stevens: The next is Charles Lindley, of Salem.

OBSERVATIONS AND EXPERIENCES AT THE WORLD'S FAIR.

Upon the eve of December first the gates closed and there passed into history one of the greatest achievements of man—the Louisiana Purchase Exposition. No one can estimate the true worth of such practical teachings, to those who were permitted to view those massive buildings and learn lessons from their contents. Here we could compare every line of thought and every vocation of life with that of our sister States and foreign countries. The manufacturer, the machinist, the artist, the teacher, the agriculturist, and the horticulturist—all gave evidence at this great meet that there existed—that life of trade—competition, and over and above all that a social mingling together which showed clearly that no occupation is so fortunate as to be independent, but that a common brotherhood must exist for the advancement and upbuilding of a nation. Since this great and noble work has been assigned to the past, we must now take a retrospective view and note a few things that most impressed our minds from the horticulturists's standpoint.

On August 18th, with Mr. Fred Dickson, we took charge of the Indiana Horticultural Exhibit at the St. Louis Exposition and about the first thing worthy of notice was the opening upon August 21st of two barrels of cold storage apples—the last of the cold storage supply—these were one of Winesaps and one of Ingrams—grown in the orchard of and packed by Joe A., the apple man.

The Winesaps were perfect and two weeks from that day were in exceptionally sound condition. The Ingram barrel contained scarcely a sound apple. The most common remark made by those who were fortunate enough to taste the Winesaps was, "That's the best apple I ever ate."

A few plates of lemons and the Indiana bananas caused more curiosity and comment than all else combined in our exhibit. A common remark was, "I did not know Indiana was a lemon producing State." Many seeming to think that we were producing them for the market. The paw paw was a curiosity to many and if they had been ripe I believe there could have been a car load disposed of for tasting purposes only.

Many inquiries were made for the Black Ben Davis apple, but was sorry we had not even a sample while I was upon duty. The western States, however, had a fine showing of this variety which promises much profit in the future.

I must make special mention of the plum exhibit—a large number of which came from J. C. Grossman and Mrs. B. A. Davis. We could truly have said Indiana was far superior to any other State in her plum exhibit during the last week in August. We had at this time more plates than all other States combined. Indiana was rather handicapped in the manner of obtaining fruit for display, while many other States had large appropriations with which to purchase the choicest of the land. Indiana was at the mercy of public interest and dependent upon the great generosity of her fruit growers for her showing. Notwithstanding this serious condition I would say the Indiana horticulturist was generous and during my stay there, considering that the season was midway between summer and fall—a time when fresh fruits is at the lowest point, the display was exceedingly good. The tables were well filled.

Missouri, as right she should, had a most wonderful display. Beside the fresh fruits which were shown in abundance and of fine appearance, she had about 2,000 jars of preserved fruits and altogether near 400 varieties of horticultural products.

Iowa, Illinois, Wisconsin, Michigan, New York, Nebraska and Arkansas, all had most excellent exhibits and were well worthy of many hours' study, while Texas and California did the big thing as usual. I find it difficult to give even some observations in a paper limited to a few hundred words as this one is. But I am sure of this, that the observations which I made at this great fair will materially assist me in being a more enthusiastic and better horticulturist, and I doubt not that it will prove an inspiration to the horticulturists of our own State and of the world.

Mr. Tillson: I want to tell of a little experience I had there one Sunday, I think it was the first Sunday I was there. Several other States were represented Michigan, Iowa, Wisconsin, and some other States—we were all bragging on our apples. I proposed a test. I said to them that their apples were all right, and were pretty good looking, but that they were not good for eating. This was the test. That we should select certain varieties of apples like the Grimes Golden, and some others, and select a committee of five that were not interested, and seat them at a table, and bring the apples in to the committee and they were not to know where the apples came from, but were to taste them and tell which was the best. We tested six varieties, and I'll tell you right here that the unanimous vote of that committee was for Indiana every time on the quality of the apples. (Applause.) We took some of Mr. Burton's apples and some of Mr. Zion's Wolf Rivers and others that were just in the right shape, and they were away yonder ahead of those of other States. We also made a test between the north and the south and Mr. Burton's apples were ahead of the apples grown in the northern part of Indiana—the ones grown by Grossman. Indiana was ahead in quality every time.

President Stevens: I expect this is all the time we can give to this discussion this evening. Have you a speech to make tonight, Mr. Flick?

Secretary Flick: The people who are here assembled may remain here just as long as they please. There is no law whereby to close the doors at a certain time. You may stay and hold intercourse and get acquainted, and discuss such matters as you may see fit. All stay.

President Stevens: The Introduction Committee may now take charge.

The meeting stood adjourned and apples, nuts, cake and candy were served to about 300 people.

THURSDAY MORNING.

President Stevens: We will now take up the program where we left off last night. The first thing in order will be some more reports along the lines of the Observations at the World's Fair. We had a part of those on the program last evening. We will hear from H. M. Stout this morning.

H. M. Stout: Mr. President, Ladies and Gentlemen—I have no apology to offer for appearing before you this morning. If I had my way about it I would have been a listener rather than a speaker.

I feel very much out of place in discussing this subject in connection with such entertaining speakers and horticulturists as Messrs. Burton, Lindley, Swain and Grossman. However, I shall speak of some of the things that might be improved upon if we should again exhibit at a world's fair. I think that some one should be in charge of the exhibit who could devote all of his time to the work throughout the fair, one who thoroughly understands exhibiting fruit to the best advantage and the methods of the jurors in scoring the fruit and making their awards.

For example, some one sends ten plates of fine fruit. It would be better to make up one or two plates of the very best specimens of an even size and color and if they are good enough to score above 80, they will win a medal for the exhibitor and the other plates can be entered in the State's exhibit and the exhibitor will get credit for them there. There is little to gain in quantity and you may lose several points in quality. I confess that it was several days before I understood this and then only when Prof. ——— explained it to me. This is only one of the many things that the person should know, but it will serve as an example. In some ways the Indiana exhibit reminded me of an agricultural exhibit when we first saw it. You know that is the fad now to exhibit some of the soil in which the plant grew along with the plant, but I did not know that it had reached horticulture yet. This is no reflection on those who preceded us in charge of the exhibit for we soon learned that each plate of fruit must be wiped off and the plate cleansed at least every second day. The ladies of our party did not go prepared to scrub, but they found plenty of it to do.

The Indiana display in the last days of September was one that all Hoosiers might well be proud of. It differed from any other exhibits in the fact that it contained no fruit of the crop of 1903, while some of the State's shows were made up almost altogether of storage fruits of last year's crop.

Indiana showed a greater variety of the larger fruits than any other and it was gratifying to have the judges come to Indiana to compare and identify fruits from all parts of the building.

Indiana horticulturists are well up in nomenclature and made very few mistakes in naming the fruit. I call to mind by Mr. Burton, the Bough apple. It was claimed by Mr. Irvin, one of the jurors, to be an old variety by a local name.

In looking over the exhibits of other States we found whole tables filled with a single variety of one of the leading commercial sorts, as Arkansas Black, Ben Davis, Jonathan, etc., while the greater part of the fruit shown by Indiana was fruit which has a general or local reputation for quality. This I think a compliment to the tastes of her people. They prefer to tickle the palate rather than the eye or fill the purse.

The pawpaw attracted no little attention and comment.

The wild nuts drew many questions from the visitors. And the Knox County watermelons were admired by all, without regard to race or color.

Of the foreign exhibits the ornamental training of fruit trees were the most interesting, and many other features of the horticulture part of the fair were of great interest, but space and time will not permit me to mention them. Upon the whole, every Indiana fruit grower should feel greatly encouraged by the State's success at the World's Fair.

President Stevens: I wish to add a word of explanation. The committee having charge of this exhibit realized the fact, as Mr. Stout has stated, that it ought to retain one person in charge all the time during the entire fair, but as our means was limited it was impossible for us to maintain one person there all the while. There was no individual that could afford to stay there the entire time simply for his expenses, and the only thing we could do was to divide it among the fruit men who could afford to go there for a couple of weeks and carry on this exhibit. The only reason that one person was not put in charge at the beginning was on account of the lack of means. We only had five thousand dollars appropriated for the entire exhibit, for collecting fruits, cold storage, installation, and everything, and so we had to be very economical to carry it on at all. I say these few things by way of explanation.

We will now hear from Mr. J. C. Grossman, of Wolcottville.

J. C. Grossman: I did not take time to write a paper on this subject, because I saw that there were several on for papers and I knew that it would be so thoroughly discussed before my turn came that pos-

sibly everything would be mentioned by the speakers previous to me. But there are things that we can all learn. Possibly some of you would be interested in some things which I shall say. I spent a few days at St. Louis in the opening days of the Exhibition and assisted in arranging and putting out our display ready for the opening of the Fair. We had the assistance of Mr. and Mrs. Stevens, and they with the committee, did what they thought best at the time. There was a great deal of confusion among the exhibitors at the opening. We had arranged with Chief Taylor for plates of a uniform character, and we paid a big price for them. We had strict orders to have our exhibit in shape at a certain hour on Saturday, the first day of the Fair, but there were no plates on hand and it placed us in a very embarrassing position. What to do we did not know. After discussing the situation with the States which were close to us, and after discussing and talking it over among ourselves, we decided that for the reputation of Indiana we would make the best showing possible at the opening with what fruit we had in cold storage, if we had to "pile" it on the tables. Fortunately the Superintendent of the New York exhibit went to the city and borrowed or rented three thousand plates, and I caught a glimpse of them as they were unloading them and we rented about five hundred plates of him, and these we had at the opening. We selected from cold storage stock what we thought would represent fairly each portion of the State. Iowa decided that she would not show her best fruit at the beginning, but would save it and put out some that wasn't so good in the beginning. We did not just know what the character of all of our fruit was; we did not know whether it was all good, or whether there was some poor fruit among it. But we took representative packages from each district in the State, and as a result we had some very fine fruit at the opening—much better than a great many of the States. I think perhaps this was the best thing that we could do under the circumstances. It gave our State the reputation at the beginning of having fine fruit and a good display. We did not have the fruit that we might have had, for we did not have the means to send men out to gather up the very best. We had to depend upon contributions, and they were slow in coming in. The fruit was poor in some sections of the State, and we did not get much fruit from those sections. Thus we were curtailed in the amount of fruit that we had, but we were very much pleased with the condition of our fruit. Nearly all of that that was opened at the first was in a first-class condition, and we did not lose out of the entire lot in storage but ten or fifteen per cent. of the fruit, and nearly everything came out in first-class shape.

As Mrs. Stevens mentioned in her paper last night some varieties scalded and would not keep after being put out there. Prominent among those were the Ben Davis, the Indian, and the Wagner. The Wagner especially was poor. On the other hand we had very fine apples, such as the Northern Spy, Tompkin's King, and numerous other varieties which were in perfect condition and kept for weeks.

Mr. Zion: How about the Wolf River?

Mr. Grossman: Well, I can hardly say.

Secretary Flick: They came out in pretty good shape.

Mr. Grossman: Yes, that is true. That is a pretty good apple, and it created much comment and always attracted attention. Men of twenty years' experience said they had never heard of it before. The apples were sound and stayed in fine condition, and when they were opened they made a very fine show. I think it was remarkable the condition they were in.

There was a discussion among the States as to whether or not they would make a show at first on account of not having plates, and there were a great many that were not ready. They did not have their places ready at all at the time of installation, and Missouri was one among the number. All she had was some preserved fruit, she did not have any fresh fruit at all at the opening; the same can be said of many of the other States. Ohio made no show at all. Pennsylvania, New York, Arkansas, Oregon, Kansas, Nebraska, Iowa, and ourselves, and possibly a few others made an exhibit at the opening, but Illinois didn't show anything; Wisconsin didn't open up any fruit at all. The orders were very strict that the exhibit was to be in good shape at ten o'clock on Saturday morning, the first day of the Fair.

I did not get back to the Fair again until the second day of October, and at that time everything was arranged nicely. I left the exhibit in charge of Mr. Johnson, Mr. Flick, and Mr. and Mrs. Stevens. Upon arriving home I found I could not do anything in our section of the State until after the fall apples began to ripen. Berries were so perishable that we finally decided not to attempt to send them. We made one attempt and quit. We shipped plums and early apples. I made a weekly shipment, and I think I made some mistakes in sending. I was not careful enough in making my selections. I should have cut down the quantity and sent only the best specimens and a higher quality. As Mr. Burton has mentioned in his paper that was the fault with others, as well as myself. We were not careful enough, but it is hard to get fruit contributed, and it took us a good deal of time to get enough. This fall when I went this year's fruit was in its prime, and we had excellent fruit to make a show with. Just as everyone did when they first went there, I presume, we cleaned up, washed the dishes, washed the tables and I'll tell you we had to do that frequently over there. We had a great deal of fall fruit the first day I was there or the first week rather, and we filled five hundred plates, but instead of limiting ourselves to that number we increased it to a thousand. Before I left we had a display fully equal to those of any of our neighboring States. We received many compliments on the state of things, and many people told us that we had an exhibit

that was the equal of any of the States, and far ahead of a great many. Our fruit was fresher and brighter looking than some of the States, especially New York. While Illinois showed some varieties that were ahead of ours I did not think their general exhibit was equal to ours during the months of October and November. We showed a great many varieties. It was a noticeable fact that we had few of the inferior qualities of commercial apples on exhibit. The Ben Davis was scarcely visible among the other varieties. We had a few plates, but they did not make a show. We had more Grimes Golden, Jonathans, Northern Spys, Rhode Island Greenings, Snow, Mackintosh, and another variety of the family Fameuse, a Fameuse Sutra. It is a very showy apple, but has a poorer quality than the Mackintosh or the Snow. There were many things to learn there.

We received a few plates of fruit from Greencastle that received probably as much comment as anything we had on exhibit while we were there, and that was some plates of Grimes Golden, and some Salomes. They were said to be the finest specimens seen there. The Grimes were of average size, not quite so large as some we had, but they were as perfect as a specimen could be made, and they received a very high score. This gentleman must have given these trees a very perfect spraying and careful attention. The skin was perfectly clear and delicate and waxen.

We had many calls for apples from people who said they were from Indiana, and I think we were worked quite frequently. We found numerous people, especially St. Louis ladies who claimed that they were born in Indiana, and wanted a taste of the Indiana apples. Of course we accommodated these people when we could. When we would be clearing off the tables the people would take the fruit and appreciate it even though it were specked, and we found out before we left that Indiana fruit had the reputation of being about as fine in quality and finer really than most any of the other States. We had more visitors seemingly than any other State in sight. I do not know whether the report had gotten out that we gave away apples or whether it was a fact that we had a more attractive exhibit.

Mr. Tillson made a statement last night in regard to the quality of the apples grown by Joe A. Burton in Southern Indiana. Possibly our apples do not ripen as soon, but they are just as good in flavor. We can grow better Northern Spys and Kings. Of course we can not grow the Winesap in Northern Indiana or the Jenett like they do in Southern Indiana, but we can grow good varieties that they can not grow in the south. I am confident that the quality of Indiana fruit is better than that of the middle west. We had many compliments from the jurors on the apples from Indiana all the time, so I can say without boasting that Indiana has the reputation of having fruit of the very best quality, and now all we need is men with capital to grow the fruit.

Oregon made a fine show of fruit. They put out a car load of fruit one week that was simply immense. They were fine specimens. The skin was perfectly clear and colored with the highest color and they seemed to be perfect in every respect. Of course it is understood that they do not have the quality that the Indiana fruit has. The western fruit, as a rule, does not. They showed them in boxes—a large portion showing the different styles of packing, and it was certainly a great display. They had apples that were immense in size. Such apples as the Spitzenburg, Jonathan, Winesap and others were placed in boxes with shelf paper around them, to take the eye of the customer, and of course they could sell them at a high figure. I was much impressed with their style of packing, and I am sure that apples will sell better when packed so nicely. If we would pack our fruit in packages that could be carried away in hand we could sell much more of it and get better prices. I think this is one thing we should learn. It is very hard to get apples packed correctly. These western packers have become so expert that they know from a glance at the size of an apple just how to place it in the package to make it fit. They have learned it from experience.

Mr. Swaim: It seems to me that there is not a great deal to be added to what has already been said here. I was at the Fair for two weeks. I am of the same opinion as Mr. Stout, that it is a mistake to begin an exhibit of that kind without a superintendent that will stay there and follow out his own plans throughout the entire time. Of course the men that took care of this exhibit were competent and good men, but they all had different ideas as to how things should be conducted and it would naturally break up the continuity of the exhibit. Of course, as Mr. Stevens has explained, that mistake was made from the lack of funds. We were seriously handicapped, and I believe as Mrs. Stevens said last night, Indiana made the best show for the money invested of any State exhibiting there. If we could have had just a little bit more and employed a superintendent to stay there we would have had a far better show.

There were some few things that were of special interest there in our exhibit, among them was the watermelon. Now I was there when the car load of Southern Indiana watermelons were received, and I'll tell you they were fine. Many of the superintendents and jurors tested them and the highest compliments were paid on every hand to Indiana watermelons.

We found very many people that were really ignorant as to the native nuts, such as chestnuts, beech nuts, walnuts and hickory nuts, and a great many people from this State, especially the younger generation, were ignorant of what they were. They had never seen them in the State exhibit and they attracted a great deal of attention.

There was another thing attracted attention and that was the Hoosier banana, or the pawpaw. This is all I have to say in this regard.

Mr. Sylvester Johnson: I was not here last night and I realize that I missed a feast. I have been much interested in these remarks from the gentlemen concerning the World's Fair. I was there myself a good deal of the time. I was proud of the exhibit. I will say that the fruit was in fine condition while I was there. On the whole the exhibit was a success, and Indiana will have something in the future to be proud of on account of the exhibit.

Secretary Flick: I want to state that as far as possible the whole matter of the Horticultural Exhibit at St. Louis will be published in our annual report with all the details possible. We have kept a pretty accurate record of all who made entries and the varieties they entered. We have also kept a record of when the specimens were put on the table and when they were taken off, and all that we found out concerning the variety, and have kept these for future investigation. We are trying to see if apples from the northern part of the State, and those from the southern part of the State are equally well behaved in cold storage. We are trying to find out if apples from a certain soil keep better in cold storage, than those from another soil, and there can be a great many facts worked out from this exhibit in this way. The number of exhibitors were about two hundred. The number of people that put their fruit in cold storage last year (1903) were about one hundred. I am not positive, not having the figures at hand. Altogether there were over fifteen thousand plates of fruit exhibited, or put upon the table. Visitors who saw on the tables only five or six hundred plates of fruit should remember we changed the fruit frequently, and that it took quite a lot to keep it running during the whole time of the Fair, about nine hundred bushels. Our showing of apples was good, and there is no doubt about that. Nearly everyone gave us that compliment, especially on the better quality of commercial apples. The committee at the beginning claimed that Indiana could grow a good sized commercial apple with more flavor, more color, better texture, and better keeping qualities than western States. We thought that we were right in that, and it seemed that everyone there, whether they were Hoosiers or not, wanted to taste our apples to ascertain. I think we did as much good in that as we could have in any other way. It caused us to have a reputation for apples of fine quality that few other States have.

I was much disappointed in the character of the Eastern fruit, the fruit from New England, and New York, and Pennsylvania. Their fruit was under size, but possibly this was because their orchards are old. The flavor was very good. New York is the home of the King, but they didn't show as nice Kings as we did. Neither did they show as nice Greenings, or their boasted Baldwins. They were not as nice as the Indiana apples in size, color nor flavor.

There has been reference made to the great showing of apples from Oregon. That was a compliment that they deserve. It was perhaps the

greatest showing of apples ever made in America. It was the cream of their orchards. The superintendent told me that they had thousands of bushels of apples of an inferior grade that were lying on the ground and going to waste because there was no market for them. If they made a profit on their apples they would have to get two dollars a bushel when shipped as far east as Indianapolis. So we can infer from that that we have the advantage of these apple growers, for if we can get two dollars a barrel there is a profit for us. Every apple they sell must be a perfect apple, and they are at a great expense to assort them and ship them.

In reference to the nuts, Indiana did make a good showing of nuts. There were many kinds that I did not know we grew. There was one nut there which especially attracted attention. This was a cross between the pecan and the hickory nut. It was probably two inches and a half long, and about an inch wide, and three-fourths of an inch thick. The shell was thin and full of the kernel, which had the flavor of the hickory nut. This nut came from Posey County, and like the pawpaw spoken of, we had a time keeping these nuts, for they were usually swiped.

As to keeping apples in cold storage we found nothing better than the Salome. They were picked at different times and crated in different ways and when they came out of cold storage they were in fine condition. We kept them on the table for a hundred days, from the first days of the Fair until the hot days of July and August, and they were in pretty good condition when we took them off. Of course they were wilted, but they were sound and I suppose they would have lasted until now if they had been left on the tables. I want to call attention to something else. The State early at the beginning of the Fair—or the committee, I should say—saw that we were badly in need of advertising literature, so they concluded to prepare a pamphlet entitled, "Some Facts about Indiana Fruit Culture," and we had them published, and distributed about ten thousand copies of them at St. Louis. It was something which the people were anxious to get and out of the ten thousand which were taken from the tables I discovered very few cast away in the corners or on other tables. I think we ought to do something more of this kind in the future, and this is one of the things which should be undertaken if we conclude to make the Secretary's office permanent. We should get out this kind of a pamphlet and spread it all over the country and I am sure they will do us much good. We will have to get more capital in our State before we can develop the fruit interest properly. I should like for each one of you to take one of these books home with you. We have enough of them for you on the table in the other room.

I think that none of us have a right to be ashamed of our exhibit at the Fair. It was the first State exhibit that the State has made. We were unused to such work—both the growers and the managers were—and possibly next time we can do better, but other States, even those who had been in the same business for ten or twelve

years made mistakes, so I think we should feel satisfied and we hope that the growers of the State who have sent in their fruit will receive due credit from the jurors for all they have sent.

Sylvester Johnson: You made a mistake as to this being our first State exhibit. I think I took the first one to Philadelphia.

Secretary Flick: That was not a State exhibit, it was from the society.

Sylvester Johnson: I believe you are right since I come to think about it. I know I went there in 1876, but I believe it was simply an exhibit from our society.

Mr. Stout: I think one point has been overlooked, and that is to compliment the work of this society in doing what it has. Hardly any of those ten thousand plates of fruit were sent by anyone outside of this society. Almost every plate was from some member of this society and I think it deserves great credit.

Professor Troop: I have been listening to these discussions and it comes to me that one of the things that goes to make up a successful fruit grower is belief in the place where he lives. He must believe in his State and in the particular section of the State in which he lives, and think that it is the best place for growing fruit. If he believes this he is going to make a success of fruit growing. In listening to this discussion these things will crop out. Some think that Southern Indiana is the best place for growing apples, and Mr. Grossman insists that Northern Indiana is the best section for apples. Now Central Indiana can grow apples and good ones, too. I may say that while Tippecanoe County is not famed except around Clark's Hill for their fine apples, I sent some to the World's Fair from the experiment station and they told me that they were the best specimens that they had had, especially the Yellow Transparent. I intended to send every week until the close, but a big hail storm knocked my expectations all to pieces and the apples, too. Now I wish to leave the thought, that in whatever State we may be, or whatever section of the State we may live we must believe in that section and believe that it is the best, and that goes a long ways in making it a success.

President Stevens: I want to say here on behalf of the Indiana World's Fair Commission that we appreciate the work that has been done by Indiana—the Indiana Horticultural Society—and without the assistance of the various members of our society it would have been impossible for us to have maintained and kept up a creditable exhibit throughout the World's Fair. Most of the fruit growers of the State contributed their fruits gratuitously and put in a great deal of work for which no

charge was made, and there were no funds to pay the charges if they had been made. So I want to say on behalf of the Indiana Commission and on behalf of myself as having charge of this exhibit, that we appreciate the work that has been done by this State Horticultural Society, and we hope that you will get credit for the exhibits made, and will secure your returns in the future.

In view of the fact that Colonel Logan has not yet come, we will take up the subject of "Gathering, Packing and Marketing Apples," by James M. Zion, of Clark's Hill.

Mr. Zion: I am surprised that I have been called so early in the day. I can not understand why I am put down to talk on so large a subject except merely to introduce the matter so that questions can be asked and it can be discussed, and I think that is all they put me on the program for. I have read a great many articles on picking and packing fruit, and I am always interested in all horticultural papers, and whenever I find an article I read it. They read nicely, and I have been pleased with some of them, but I would not attempt to follow them out. I want to take up the lines in connection with this subject on which I have had personal, practical experience. I think the first is gathering fruit.

President Stevens: Tell us what you think of the outlook for fruit growers.

Mr. Zion: So far as fruit is concerned, I think that the apple grower in the State of Indiana has a more promising prospect than those of any State in the Union. I am honest and sincere in this, for we can grow good standard varieties with fine flavors—better flavor in fact than any other State in the Union. I have tasted apples from almost every State. Of course there are certain varieties that will not grow in certain places in our State, but it was determined at St. Louis and on other occasions where tests have been made that Indiana grows a great variety of good, standard apples.

Some visitors, fruit growers, told me they did not know we could grow so many different varieties in Indiana. I told them to see what we were doing.

Secretary Flick: I want to ask you if you think there is any danger of Indiana growing too much fruit?

Mr. Zion: No, not of the right kind. If you will go to the railroad yards of this city and see the car loads and car loads of inferior apples that are being shipped in from New York in bulk you will think that the people of Indiana certainly can grow as good fruit as that. New York and other States are shipping a very inferior grade of fruit by the train load right now into Indiana and are finding a market for them. I have no trouble in finding a market for my apples.

But to return to my subject. The ripening period used to bother me a great deal. I have been talking about the growing of apples, now I shall talk about picking them. Some folks think you should gather apples in the dark of the moon in October. I do not pay any attention to the moon myself. I read an article in an agricultural paper saying that apples should be picked on the tenth day of October, and things like that. Now there is no more reason why we should gather our apples at a certain date than we should cut our corn or oats on a certain date. Nature has provided a certain time for apples to mature, and there will come seasons when certain apples will mature quicker than at other times, and they will then begin to fall on the ground. The first that fall may have worms in them, but as soon as the good apples begin to fall to the ground, don't lose any time in gathering them. When you can put your hand under the fruit, raise it up, and it will separate nicely from the stem, then it is ready to be picked. This is the same with cherries, plums, pears, etc. It is sometimes best to gather three or four times from one tree. Just the same as with berries. This is true with the Hubbardston that my friend spoke about. You should commence in time to do this. This is also true with the Wolf River. There is one advantage in this. This apple is a good cooking apple when it is only one-third grown and we make apple sauce out of them. There are several varieties of apples that should be gathered this way. The Grimes Golden must be gathered quickly. As soon as they begin to drop we begin to gather them and put them in barrels and ship them to cold storage. I have the picking in mind when I choose my trees. I commenced buying trees fifteen years ago, and I called for a low top tree with a good stem and good roots. At that time many advocated high tops, but I was always in favor of the low topped tree. The stem should be protected from the cold wind and the hot sun. There is also an advantage when we go to gather the apples. Most of my apples can be picked from the ground. I can truly say that we can stand on the ground and pick one-half of the apples.

Walter Smith: Do they do as well when they grow near the ground?

Mr. Zion: I think so. I do not notice any difference. We have what we call a low down or handy wagon with a large platform, sixteen feet long and seven feet wide, which will hold from forty to fifty bushel baskets. We take everything we are going to pick off the trees and put it into the baskets. Now as to packing. I have tried packing right in the orchard, but it was very unhandy as the hammers were always lost, you couldn't find the nails, and it was very inconvenient, so now we do all of our packing at the packing house where we can have everything in readiness. In the packing house for two or three years I graded the apples. I am now trying a different plan with some of the varieties. I put the apples as they come from the tree in barrels and send them to

cold storage with the object of resorting them. I have found that if we shipped out a barrel of apples from cold storage that were sorted in the packing house, to the groceryman, and there happened to be half a dozen rotten apples, he would dock us from fifty cents to a dollar and a half on the barrel. They would tell us that the apples were in a very bad condition. Now I never let the apples go out until they have been sorted and when they go to the groceryman and he talks about there being rotten apples we know what kind of a man he is. We think it pays us to do this. If you do not the grocery man will take advantage of you and try to dock you if there are only a few rotten ones in the bunch.

Now as to packing in boxes or barrels. There are advantages and disadvantages in packing in boxes. I think it is an advantage when you have a very superior quality of fruit early in the year. At the fall packing time we come in contact with the apples from Michigan that sell for from one dollar to one and one-half dollars a barrel. We know that we can not compete with these prices. So the first thing I do is to ship my apples to cold storage, and after the other apples are off of the market I sell mine and get good prices for them. The apples that we would have to sell from one and one-half to three dollars per barrel we can get five dollars for when we take them out of cold storage. We have too many apples to compete with at that time. And with cold storage we now have a facility for taking care of our fruit and demanding better prices. I have this to say in regard to packing apples in boxes. I requires an expert to pack them. I usually ship my Yellow Transparents in boxes. They will bring from a dollar to a dollar and a half for a three-peck box.

For gathering apples that we can not reach from the ground I use a step ladder eight feet high, which is wider at the bottom than it is at the top. We use this ladder when we can not reach the apples from the ground or the platform of the wagon.

Walter Smith: How can you get such a wagon under the tree?

Mr. Zion: We run them under just as far as we can. I have a Saginaw handy wagon. I could not get along without it.

Mr. Burton: Do you have springs on the wagon?

Mr. Zion: Yes, sir, of course we have springs. We load them down with apples too.

Mr. Swaim: Do you get more money for your fruit in boxes according to the bulk than you do in barrels?

Mr. Zion: Yes, but there are exceptions. It is nice to talk about boxing apples but it is not so easy to do. It almost takes an expert to pack in boxes. We should pack nothing but fancy fruit in boxes—those that have a nice color. In some regions it is necessary to use potash to get

color. When they do this it cuts down the profit. This is true in Washington, but here the soil has sufficient potash to color nicely. We can grow fine apples with very little expense.

Mr. Swaim: I thought you said you would prefer boxes to barrels in some cases.

Mr. Zion: In some cases, yes; in early, fancy fruit.

President Stevens: I have observed that a number of fruit growers in our State are shipping directly to the consumer from the orchard. Have you had any experience along that line?

Mr. Zion: Not very much. My crop is too large to handle that way. One thing I have noticed and that is the groceryman charges the consumer about 40 per cent. profit and frequently sells culls at the price of fancy fruit. We should educate the consumer and when the groceryman insists on a high price for his fruit they should insist on a high priced fruit. They should demand good apples. There is where the trouble comes in. We must reach the consumer. This can be done by educating the consumer to demand good apples. I just wish you could see the apples that were shipped from New York in here. It is terrible.

Mr. Williams: What does it cost a month to put apples in cold storage?

Mr. Zion: Ten cents a month or thirty-five cents a season per barrel. They will not charge you any extra for six weeks over season-time, but if you do not tell them when you put them in, how long you expect them to stay, they will likely charge you for the season, because they do not like to be moving them around.

Mr. Hazelett: I would object to hauling the apples in baskets to the packing house. I think that the jostling in the baskets would bruise them. Of course such apples as the Ben Davis it would not hurt, but I should not like for a Yellow Transparent to be treated in that way.

Mr. Zion: I have not suffered any inconvenience. I get my apples to cold storage just as quickly as possible, and when we pack in the packing house we will sometimes work until ten or eleven o'clock at night to get them off and sent to the express station, and by the next day they are in cold storage. When we worked in the orchard we could not do this way. I have heard it said that the Ben Davis scalds pretty badly in cold storage, but I think this is caused by the apple not being gathered at the proper time.

Mr. Simpson: What kind of picking tables do you use?

Mr. Zion: I prefer taking the apples from the baskets and putting them into barrels. I can do this pretty fast; I can sort twenty-five barrels of apples in three or four hours myself. When three or four men are working it is pretty quick work.

Mr. Simpson: Do they all sort from baskets?

Mr. Zion: Yes, sir.

A Woman: Do you sort them when you gather them?

Mr. Zion: No, we take them to the packing house.

A Woman: What do you do with the refuse apples?

Mr. Zion: We make cider out of them. We do not have very many of them for cider. I do not have a cider press on my farm, for if I did I fear I would become a cider maker instead of an apple grower and I do not want to do that. The best way is to cultivate your trees, and spray them, and see that the rotten, wormy apples are taken out from under the trees and get fancy fruit. I am a firm believer in the fact that if you leave them under the trees they will injure the other apples.

—————: Do you use a commercial fertilizer around the trees?

Mr. Zion: No, sir.

Mr. ———: I would like to know how the Wolf River does in Central Indiana?

Mr. Zion: I live in Tippecanoe County, forty-eight miles northwest of Indianapolis. I have been told by a man that has been all over the United States that he has never seen Wolf River apples that were as highly colored as mine are. I do not know what particular quality there is in my soil that causes this. It was remarked to me often at the World's Fair that mine were more highly colored than they could get them in their part of the country.

—————: How would they do here at Indianapolis?

Mr. Zion: Indeed, I could not say for sure, but I think assuredly well.

—————: What is the character of your ground?

Mr. Zion: It is good corn ground. It is an alluvial bed with a black subsoil.

—————: Black soil on top with a clay subsoil?

Mr. Zion: Yes, sir.

Mr. Hazelett: Is there gravel under the soil?

Mr. Zion: I think not.

Mr. Hazelett: I have been raising Wolf River apples near Greencastle, this state, and they seemed to be very nice—they were very prolific—but I could not sell them. I had a hundred bushels or more that went to waste. They did this simply for want of a market. I could not sell them for half as much as I could the Yellow Transparent. I could not find Mr. Zion's market at all.

Mr. Hobbs: I would like to ask if your Wolf Rivers looked like Mr. Zion's.

Mr. Hazelett: Yes, sir. They were fine looking apples, but somehow or another I could not sell them.

Mr. Zion: Why did you let them go to waste? Why didn't you put them in cold storage?

Mr. Hazelett: I could not sell them out, and I was almost afraid to put them in.

Mr. Zion: That is what I do, for this apple comes when there is so much other fruit that I put it in cold storage and save it. It is too bad that you let them go to waste. I shouldn't have done it. Did you gather them at the proper time?

Mr. Hazelett: I think I did. As long as there were Wealthy apples I could not do a thing with the Wolf River. I had fifteen or twenty different varieties that would sell better than the Wolf Rivers.

A Woman: They are considered a good cooking apple but not a good eating apple.

Mr. Zion: I have always found the Wolf River a beautiful looking apple, and usually has a good flavor. There are exceptions. I might tell you that there were different notions about this. I sold a large amount of apples to the president of a paper company. He saw my apples at the State Fair and ordered ten barrels. I stated to him that the Wolf River was a fine cooking apple, but was not very good for eating. Not long after I delivered the apples to this gentleman I met him on the street, and he said, "Didn't you tell me the Wolf River was not a good eating apple?" I told him I believed I did. "Well," he said, "we think it is one of the best we have." Now that was his opinion. It is getting to be the fashion in the hotels nowadays to serve baked apples in quarters, and the Wolf River fills the bill exactly. Of course there are different notions about this apple. If you will give it a fair test it will not disappoint you I am sure. I think it is a nice, mellow, good eating apple.

Mr. Lafuse: Speaking of cultivated orchards. Do you think you raise just as good apples by manuring and mulching, or by cultivating the fruit?

Mr. Zion: I am trying both plans. I have about fifty acres, and one half is under cultivation. I have kept it under cultivation for about eight years in order that the trees would have good, strong constitutions. I have kept them from bearing on purpose. If you take a single tree and plant it in a yard and neglect it it will come into bearing very early. I think we should cultivate an orchard for seven or eight years to keep them from bearing. You will get longer lived trees in this way, and they will be better trees. I sowed the orchard in beans and received from a dollar and a quarter to two dollars a bushel for them. This was an easy way of taking care of the orchard. After the beans were out of the way I gathered the apples. When the apples would fall I would put the pigs in to clean them up. Then I planted rye, or corn, or anything of the kind. I never let it mature, for that is what takes the life out of the ground. I believe in the mulch theory. I cultivate the orchard so that the roots will go down, then in the dry seasons the trees are not affected so much. If I do not do this the roots will be on top of the ground and the dry weather has a wonderful effect upon them. An orchard should be well underdrained. If there were a drought it would not hurt my trees. If it were not for this I would be in great fear for my fruit. It is very dry now in our part of the State, as well as in the southern part of the State. I am in favor of the mulching theory. I want to keep the roots down if I can.

President Stevens: Are there any other questions? We still have a few minutes.

Mr. Snodgrass: There have been many things spoken about, but Mr. Zion spoke of potash being the agent that colored the apples. It may be that I am mistaken, but I have read and have come to the conclusion that potash is not the coloring agent. The coloring agent is in the soil. I do not wish to say that this is true, but I wish to ask, am I right?

Mr. Zion: It is asserted that potash is the coloring agent. Of course most soils naturally contain some potash and color fruit well. I think that the cool weather, changes in temperature, etc., do it. I am not authority, but I do believe the cool weather does it, or at least has something to do with it. Our beautiful colored apples come in the fall and winter.

—————: We cannot say that this is always true, for apples grown in warmer regions are well colored, but I, too, think that the cold weather has something to do with it.

Walter Smith: You will notice that the side next to the sun is always colored, and the other side is not on most kinds of fruits. I think there is no question about the sun being the coloring agent. The better colored the apple is the better matured it is. I think there is no question about this.

Mr. Snodgrass: I was speaking about the coloring agent contained in the soil. I think we all realize that the sun colors the apple, or has a great influence in coloring it, but I am speaking of the agency in the ground, and asked what agent in the soil was the chief coloring agent? That is my question.

Mr. Smith: The sun does the coloring. It acts on something inherent in the fruit which the soil supplies.

Secretary Flick: The question asked just now has brought to my mind one thing which I have thought about often. We should have the apple studied from a scientific point of view. I think we should insist that our experimental stations take up the apple in like manner as the corn growers have taken up the subject of corn, and study it from a scientific standpoint: what conditions give color, what flavor, texture, etc. Now if this question can be answered it ought to be done. I think this subject should be studied in this way just as soon as possible. We have lost much because this has not been done. We have been studying fruit from an experimental standpoint only.

Mr. Howland: This question cannot be settled here. I think that a man that has lived as long as Mr. Zion has, should know that sunshine is essential to color, and also to flavor. An apple that has been hidden from the sun will not have the color nor the flavor of the one that is sun-kissed. You take any kind of fruit and it is the same way. The Kieffer pear is no account at all unless so situated; nobody likes it, and no one will have it. The sunshine has much to do with the quality of any fruit. My experience tells me that the potash and ashes would not add the color if it were not for the sunshine.

My friend spoke of reaching the consumer. If any of you can by any arrangement bring that about successfully, then you have accomplished a very great thing for the consumer, and for the fruit grower as well. When fruit lowers in price it takes the groceryman several days to find it out, as has been said here. It takes the middleman a longer time to find it out. He never is able to see that there is a great supply of fruit on the market and the prices down. If it advances he can see it the first thing in the morning. The first telegram will tell him, and he will immediately inform his customers that fruit is up.

The best thing we can do is to try to get some plan whereby we can rid ourselves of some of these middlemen. If we can do something like this we will be a great deal better off.

Mr. Kingsbury: What effect has sunshine on the human family?

Mr. Howland: It has the same effect on the human family that it has on apples. It is a health-giver. If the ladies would only get out in the sun more they would have more of a bloom on their cheeks, and they would be much sweeter.

Mr. Walter Smith: I do not know whether I am in order just at this time, but it certainly comes in connection with this question of sunshine. I believe in high-topped trees, as far away from the ground as possible and an abundance of sunshine. I think we can get better trees and can raise better fruit in this way. I would like for some of the experts to tell us something about the trimming of trees. That has not been discussed here. I would like to hear from Mr. Flick. He is an expert.

Secretary Flick: I could not tell you how to trim your trees. This is something which a man will have to learn for himself. There are so many different conditions. I trim my trees any time I see they need it when I am in the orchard and have a sharp knife. I try to cut off all of the dead wood and the water sprouts. If I cut off any very large limbs I have them painted as soon as convenient. I do not like high-headed trees in our climate. We are subject to storms of wind and hail and sleet and other things which make it hazardous and unprofitable to grow lofty fruit trees. There are many reasons why the trees should be low down. The trimming, spraying, picking the fruit, etc., is much easier and cheaper. Fallen fruit does not bruise, winds do not get such a hold on the low down tree. If you begin an orchard properly it will need but very little trimming. We ought to have an ideal in mind of the shaped tree we want, and at the beginning prune and leave enough branches to afford that.

Walter Smith: Would you leave a tree thin enough so you could climb through the limbs?

Secretary Flick: Yes, however we do not climb trees very much, for it hurts the tree every time you do that.

President Stevens: It is now our noon hour and we will adjourn for dinner. We will reconvene at 1:30.

THURSDAY AFTERNOON.

President Stevens: Ladies and Gentlemen: It is now time for this meeting to come to order. The first on program this afternoon is "Value of Statistical Information as Applied to Agricultural and Horticultural Pursuits," by Hon. B. F. Johnson, Chief of the State Bureau of Statistics, Indianapolis.

B. F. Johnson: It is with some little embarrassment that I come before you this afternoon and claim the right of making an apology for my appearance. I was somewhat misled as to the time of this meeting. I was expecting this convention to come off about the 20th of December, and I have made very little preparation for this occasion. Possibly you are just as well off as if I had had two or three weeks' time to make what I might term the necessary preparations in that I will not take so much of your time and will leave it for more important business, possibly.

I am to speak upon the value of statistical information as applied to agricultural and horticultural pursuits. Of course it is generally conceded and recognized by all that statistics from any standpoint are good, but a man who could bring out of a statistical subject anything of an entertaining character might be regarded as a wonder. But, nevertheless, there is an individuality which has given this subject attention as something of importance and something interesting, and they may be presented to us from time to time. Perhaps there is no other line of business in the state of Indiana that is so difficult to locate in a statistical sense as the horticultural business, simply from the fact that there is less organization and less organized effort along that line than in many other pursuits of the kind. We are compelled to make use of the public officers in different counties and townships in the state. The law makes a provision from which we may get information from the assessors, trustees and public officials, but generally they know so little about horticultural interests—these public officials do not seem to come in touch with it—and so it has been a very difficult matter for us to get any figures upon which to base our horticultural pursuits. You take the average township, and there are 1,017 townships in Indiana, and in the average township, aside from the general interest that may be manifested on the part of the farmers, there is very little attention to horticultural pursuits. Each farmer has an orchard for himself, but when the gatherer of statistical information comes along he does not have his information classified, and he is not able to give it in such a way as to be of value to the bureau, and hence we are not able, in a great many instances, to get information touching this line that would be of value to those who are interested in horticulture. This is not true in a sense of agricultural pursuits, because the people of Indiana generally are engaged in agricultural pursuits—that is their principal business. The horticultural work is simply a side line. The value of the reports along these lines, it may be readily seen, is of not much value to the student of statistics. The cultivation of a piece of corn in a certain part of the state by a successful farmer, under certain conditions, serves as an inspiration to the other farmers, and they try to see if they can be successful, and this leads to better results. I have before me an instance in which a man under certain conditions raised one hundred and twenty bushels of corn on a small acreage of land, per acre. The publication of that fact and the conditions under which it was accom-

plished, served as an inspiration and an incentive to other farmers to do the same along the same lines. For instance, if it can be shown that a farmer may sell one acre of clover hay for about eight dollars and he can add to that possibly six or eight dollars by selling the seed from the same, he is losing money, it will be of benefit to him. He has thus obtained say fourteen or fifteen dollars per acre from the clover crop, but in doing this he has not realized the results he should have realized. He is taking from the land that which he should have applied to the soil, and he has left the soil impoverished rather than enriched. On the other hand if the farmer pastures on his acre hogs and other stock, the same acre of clover that brought a return of fourteen dollars in clover hay and in seed, will produce twenty dollars' worth of meat. And at the same time he has left his soil in a good condition. He has done for the soil what he started out to do when he sowed it in clover. Now if these results can be given in the line of statistical information and the farmer can be made to know and understand that in the sowing of the clover and the feeding of the swine upon the land he is able to increase his income a very large per cent. and at the same time fertilize his soil, he has made a good point, and other farmers are willing to do likewise. The same thing may be said of the cultivation of wheat in a large way. There was a time in the State of Indiana when the raising of wheat was considered a profitable business. I can remember when there was but little wheat cultivated in Indiana, in the early days of our history, and I am not a very old man either, and yet I have seen the original forests of Indiana. The first great trouble with us in growing wheat was that it would grow up so rank that it would fall down and we had to cut it with a sickle. This condition does not exist today. Why not? Simply because we have been raising wheat until we have worn out the soil. We have been robbing the soil of the phosphates and not supplying nitrogen to the soil, but have been selling it, and have kept this up until the land refuses to respond to our efforts to grow wheat. Now, what shall we do in this matter? Shall we resort to commercial fertilizers? What is a commercial fertilizer? What is the principal ingredient? What is the element we are supplying to the soil? Largely the nitrogen, when the cheapest source of that in the world is all around us, and if we will sow clover, and plant peas in our corn field after we are through cultivating it, they will do the work for us, and it will be better done than we can do it by commercial fertilizers. Peas are good fertilizer. They supply a small amount of phosphates, and a large per cent. of nitrogen, and we get good results. When we continue to raise wheat year after year on the same soil our land is impoverished. Statistics will show that these conditions are brought about by this kind of farming.

It seems to me that we should do something toward bettering the conditions of our farmers and encouraging them along better lines of agriculture at this time. It seems to me that this is one thing that should be done.

Now take up the cultivation of fruit. A few months ago I visited an old neighbor friend of mine in the town of Fowler, and he had in his back yard a very nice grape arbor and a few vines which were well cared for, and just across the way was a vineyard, of probably three or four acres, that was allowed to grow up in weeds and no attention was given to it scarcely. This friend of mine to whom I refer, had gone to the pains of spraying during the summer season. He had a rich soil, yet he used bone dust fertilizer around the roots of his grape vines, and he kept the ground stirred and in a good condition all the while. And he had the most luxuriant crop of grapes that you ever saw growing on a few vines. Every grape was perfect. It seemed to me that they must be equal to those grapes that the children of Israel found when they had been sent to the land of Canaan, and when they came back they came with a pole on their shoulder with bunches of grapes hanging across the pole, and reaching to the ground, and this was their report. This was a kind of a statistical report that they made. The fruit told about the fruitfulness of the land and the productiveness of the vines in that country.

Now the publication of things like this is of value to every man interested in the cultivation of fruit in the state of Indiana. If you find out a good thing do not be selfish about it; do not close up like a clam and keep it from the world. Let your neighbors know it; let them know how you do things. There is no better way in the world to let things be known than to make a report to the Indiana Bureau of Statistics, or to the Secretary of the Horticultural Society and we will have it in our reports and the people will then hear about it and will understand the conditions under which you succeeded or failed, in the production of fruit or corn or wheat. These facts, as you know, should be made public. The same thing may be said of the production of the potato. Why, what do you think? Indiana is one of the best states in the Union for raising all kinds of farm produce, including potatoes, and yet, year in and year out, there is shipped into Indiana from other states hundreds and thousands of bushels of potatoes. I believe I am not exaggerating when I say that forty per cent. of the Indiana farmers buy their potatoes, the potatoes that they eat at their own tables. Am I not right? Yes, I am. Why is it? Why is it? Is it because we cannot raise potatoes in Indiana? It is not that, because there is not a corner in Indiana, be it ever so remote, but what potatoes can be cultivated successfully and with good profit. What is the trouble? Well, I am not going to tell you all of the things that are in the way, but I shall point out a few of them that come in to interfere with the farmer in raising potatoes. Bad selection of soil, bad seed, poor or improper cultivation. When you are planting plant the early varieties just as early as you can plant them, just as soon as you can get them into the ground in the spring. And when you are planting your late varieties do not plant them until about the fifteenth of June. Try the experiment of planting the late potatoes in June and then cultivate

them just as long as the tops are green. Do not plow deep, but have some implements that will just loosen up the top of the ground and keep the top loose and conserve the moisture and prevent the ground from caking and see if you do not get potatoes, nine times out of ten. If you do not, charge it up to the Indiana Bureau of Statistics.

As I said in the beginning, what I have said to you I have said without any special preparation, and you may be very thankful this afternoon that I did not have a paper to read because it would have been longer, and I have told what I had to say just as well as if I had been reading.

I thank you very much for your attention.

Mr. Garretson: I would like to ask when he would break the ground to plant June potatoes?

Mr. Johnson: That would depend. I consider the best ground for the potato crop is land that has just been brought into cultivation. It is a good site for potatoes, and I should break it just before I planted my potatoes. If it were planted in clover I would turn it under and then plant the potatoes. If I were preparing ground especially for the potato, the summer before I would put on a little barn manure, just a light dressing. There is no crop that responds so quickly and so readily and gives such results if you put on a little manure, as potatoes.

Are there any questions?

Mr. Snodgrass: I am growing potatoes. I have cultivated potatoes on the soil where I live, which I have brought up to a high standard of production from a point where it was almost a failure when I started in seven or eight years ago. I could hardly get as many out of the patch as I planted. It was not quite as good as the Irishman who planted a bushel and dug a bushel and never lost a potato. Sometimes I would lose a few. I think we should take the condition of the soil into consideration and see what fertilizer it lacks and supply it. I do not wish to take the floor away from the gentleman who had it at first at all, but I wish to add a few ideas which are in line with my experience. I do not think there has been anything said about treating the potato for the scab. A few years ago my potatoes were as scabby as could be; now you can not find a scabby potato. This is because I treated them for it. It will work most marvelously. A large potato crop is like a fruit crop. If we treat the potatoes for fungi as we do a fruit crop we will not have the scab. I produced 280 bushels per acre this year. I thought that was good. The dry weather struck us just a little bit too soon. I have been working for a potato that would produce a crop on black soil. It is hard to find a variety that will produce a crop on that kind of soil, but this potato will do it. It will grow a good crop on either kind of soil, one just about as good as the other, taking dry weather into consideration. We want a good rich

soil for potatoes. I have never used anything but barnyard manure, but I used it freely. I used twenty tons to the acre, and I have found that it pays. It must be rotted. A potato does not want coarse manure.

Mr. Howland: I do not think anything should be given in this society that is not founded on facts. We should not endorse anything that we can not prove to be true. My experience tells me that the ground should be broken for the potato that you plant in June, just as soon as it can be broken in the spring. I would have it broken just as soon as it becomes dry enough to break. It is far better than to wait until the first or tenth of June to break it. I should have it broken just as soon as it is in good condition to break. It will then retain the moisture better all summer on account of its being broken early in the spring, and if you keep stirring it on top I think you will have a better crop, because very frequently, if you wait until June the ground will be dry and will remain dry all the time, and then your potato crop will not be good. So don't forget this. Break the ground in the spring just as soon as it is in a condition to break, and keep it stirred on top.

My friend over there talked about the scab that he had on his potatoes. He thinks that he has a preparation that will remove it. Well, maybe he has. I hope he has. So have I. I haven't one like he has. Mine is to change the potatoes' ground. This is the same thing as the spraying business. It is a mysterious affair. Some will tell you that they sprayed and never had so many worms in their life. Another will tell you that he sprayed and had a great success. The surroundings have as much to do with this as the season. I think you had better spray. I do not think there is any harm in it.

President Stevens: I think this is about all the time we can devote to this subject. The next on program is the report of the Committee on Awards, by Mr. E. Y. Teas.

E. Y. Teas: Your committee begs leave to make the following report of awards:—

APPLES FOR MARKET.

Six varieties for market for Central Indiana.

S. T. S. Williams, Knightstown, first.

J. M. Zion, Clarks Hill, second.

PLATES.

Baldwin, J. M. Zion, first; Chris King, Rushville, second.

Ben Davis, Chris King, first; Simpson & Son, Vincennes, second.

Benoni, Chris King, first.

Duchess of Oldenburg, Chris King, first.

- Fallowater, S. T. S. Williams, first; Walter S. Ratliff, Richmond, second.
- Fameuse or Snow, H. W. Henry, Laporte, first.
- Gideon, J. M. Zion, first.
- Grimes Golden, S. T. H. Williams, first; Samuel H. Hazelett, Green-castle, second.
- Hubbardston, J. M. Zion, first; Frank Moffett, Carmel, second.
- Indian, Chris King, second.
- Indiana Favorite, R. L. Beck, Connersville, first; Chris King, second.
- Rawles Genett, J. C. Grossman, Wolcottville, first; W. B. Flick, Lawrence, second.
- Jonathan, Frank Moffett, first.
- King, S. T. S. Williams, second.
- Lawver, R. J. Moffett, first.
- Mann, R. L. Beck, first; J. M. Zion, second.
- Northern Spy, Frank Moffett, first; S. T. S. Williams, second.
- Northwestern Greening, S. T. S. Williams, first; W. S. Ratliff, second.
- R. I. Greening, J. M. Zion, first; Chris King, second.
- Pewaukee, S. T. S. Williams, first.
- Rome Beauty, Samuel H. Hazelett, first; S. T. S. Williams, second.
- Roman Stem, Frank Moffett, first; Chris King, second.
- Salome, S. T. S. Williams, first; Samuel H. Hazelett, second.
- Stark, Chas. M. Lindley, Salem, first; J. M. Zion, second.
- Wagner, H. W. Henry, first; S. T. S. Williams, second.
- Wealthy, Chris King, first.
- White Pippin, Chas. N. Lindley, first; Frank Moffett, second.
- Winesap, Simpson & Son, first; R. J. Moffett, second.
- Wolf River, J. M. Zion, first.
- Willow Twig, Chas. N. Lindley, first; W. B. Flick, second.
- Yellow Transparent, Samuel H. Hazelett, first.
- York Imperial, S. T. S. Williams, first; Samuel H. Hazelett, second.
- Yellow Bellflower, Chris King, first.
- Meritorious variety not included above, Simpson & Son, first for Aiken.
- Largest apples, J. M. Zion, first for Wolf River.

PEARS.

- Kieffer, Chris King, first; J. M. Zion, second.
- Winter Nelis, J. M. Zion, first; H. C. Swaim, second.

MISCELLANEOUS.

- Orange quince, Chris King, first.
- Champion quince, W. B. Flick, first.
- Plate and collection of persimmons, Jas. A. Little, Cartersburg, first;
H. H. Swaim, second.
- Collection native nuts, Jas. A. Little, first.

CUT FLOWERS.

Round bouquet, Mrs. W. B. Flick, first.

Flat bouquet, Mrs. W. B. Flick, first.

Collection mixed cut flowers, Mrs. W. B. Flick, first.

Sylvester Johnson: Mr. President, I move you that this report be concurred in.

Mr. Simpson: I second the motion.

The motion was voted upon and carried.

President Stevens: We will now have a report from Prof. Troop.

Prof. Troop: Mr. President, I know that we were generally expected to give a report of the work done during the year, and although it was not on the program I prepared something of a report, because I considered that the office of the State Entomologist is of importance to fruit growers. It has been customary to give a report of the work that is done during the year, and although this report is not complete, still it gives a practical summing of the things that we have been doing. I want you to hear it because I want you to realize if you can the importance of the work.

REPORT OF THE STATE ENTOMOLOGIST.

BY J. B. TROOP.

The work of this office during the past year, like the year previous, has been confined principally to the inspection of nurseries and orchards, and to giving information concerning the hundreds of questions that have been asked in regard to the San Jose scale and other insects, etc. I have been unable to do much more than this on account of the limited funds at my disposal.

When the present nursery inspection law was passed by the General Assembly of 1899, the principal object in view, seemingly, was to provide means for guarding against the introduction and spread of the San Jose scale, which was being introduced into the State from other states upon nursery stock, and which was so much dreaded by all fruit growers. It was the opinion of the committee having the bill in charge that the present appropriation, viz., one thousand dollars, would be a sufficient amount to defray the necessary expenses of carrying the law into effect. It was thought, no doubt, that all that the State Entomologist would have to do would be to inspect the nurseries of the State once a year, and if found free from injurious insects, etc., to grant the owners certificates to

do business. If that were all that is necessary, then the present appropriation would be sufficient. But an experience of six years has shown that, while the inspection of nurseries is very important, it is really but a small part of the work that should be done, even in connection with the San Jose scale alone. As there was no restriction on the interstate shipment of nursery stock previous to the passage of this law, a large quantity of scale-infested stock was shipped into the State and planted out by the unsuspecting fruit growers. As a result there are a number of localities in the State which are seriously infested with this insect, and where thousands of dollars of damage has been done, and it is still spreading to new localities, so that this is the most serious part of the problem which confronts us, and which can be properly dealt with only by putting a competent man in the field, as has been done by both Illinois and Ohio, and keeping him there until the people have become educated up to the point where they can do the work themselves. The remedies now recommended by entomologists are inexpensive and easy to apply, but somewhat difficult to make properly until one learns how; and so the novice is very slow to undertake it, fearing that he will make a failure of it, and, in fact, that is often the case.

Then, too, only a comparatively few persons are able to identify the San Jose scale; and so it often happens that whole orchards become infested before anything wrong is suspected by the owner. An instance of that kind came to my notice the past year. A peach orchard in southern Indiana, containing nearly four thousand trees, was found to be dying. My attention was called to it and I found that the whole orchard was infested and the scale had been there so long that almost every tree was completely coated with it. Under those conditions the only thing that could be done was to destroy the whole orchard. It was a serious loss to the owner and one that could have been avoided had it been noticed in time. More than that, it had been serving as a breeding ground for the scale for several years and other orchards in the same vicinity had become infested. It is safe to say that the saving of that one orchard would have been the means of saving more money to the community than the entire appropriations for this work amount to in five years. And this is only a single case of many that could be mentioned. With an additional appropriation of two thousand dollars a year for this work the State Entomologist could employ competent men, with the necessary outfit, to go into these infested localities and give demonstrations as to the preparation and use of the spraying mixtures, and supervise the work generally. This, in my opinion, is the only way we shall be able to succeed in getting control of the San Jose scale in this State.

In order to show that the amount asked for is within reason, it may not be out of place to state that Ohio has appropriated \$10,000 and Illinois \$6,000 annually for this same work.

SCALE-INFESTED DISTRICTS.

During the past year the San Jose scale has been found in several new localities, and in a few cases it was found so near to nurseries that it became a serious question as to the advisability of giving the owners certificates, although the nursery stock was to all appearances free from infestation. In all such cases we have advised the nurserymen to take the matter in hand and see that the instructions given to the owners of infested stock were carried out.

Last year thirty-two counties were reported as having had the scale. To this list may now be added seven more, viz., Warrick, Orange, Daviess, Jay, Hancock, Randolph and Elkhart. Vanderburgh County is perhaps the worst infested county in the State—at least, more infested orchards have been found there than elsewhere. During the summer I visited the Southern Insane Hospital, near Evansville, and found that the authorities there had destroyed a good many trees and shrubs according to the directions given one year ago; but there were others badly infested which were condemned. My assistant, Mr. J. G. Gentry, found several infested orchards near McCutcheonville, in the same county, but the owners had been using the spray pump to good advantage, so that the outlook in that locality is quite encouraging.

The only infested trees found thus far in Orange County were in Paoli, and these had been given such vigorous treatment that scarcely a live scale remained at the time of my visit in August. Princeton, Gibson County, however, was not so fortunate. Here the scale was found to be pretty well scattered all over the city, and while the city council finally took some action concerning it, yet practically nothing had been done, and the insect was left to continue its depredations indefinitely.

In the town of Linton, Greene County, where so many of the houses are either owned or rented by miners, who have but little time or inclination, for that matter, to devote to such matters, the condition is even worse than it was a year ago. Here, too, the town authorities, I believe, ordered all infested trees to be destroyed, but made no provisions for carrying the order into effect; hence the usual result. It is of no use for towns or cities to pass laws relating to this matter without making some one responsible for their enforcement.

A few weeks ago I received a scale-infested branch of an apple tree from the village of Fortville, Hancock County. I visited the place and found that in one orchard, situated in the edge of town, nearly every tree was more or less infested, and some were so near dead as to be past saving. Here, as in many other places, I found that the trees which were originally infested came from the Hoover & Gains nursery, Dayton, Ohio, some years ago, before the firm went out of business. I was informed that the agent who sold those trees also filled several other orders there, so it is more than likely that other orchards in that locality are infested.

Mr. H. H. Swaim, Assistant Inspector for the northern end of the State, reported two cases of the scale in the town of Redkey, Jay County, and one in Union City, Randolph County. He also found ten city lots in the city of Marion which were more or less infested.

Owing to the watchful eye of Sylvester Johnson, I was enabled to locate the presence of scale in several city lots in Irvington, and prescribed remedies for the same.

During the first week in December I received some scale-infested branches from Washington, Daviess County, which is the first intimation of infestation from that quarter. Judging from the appearance of the specimens it has been there for some time, and will require heroic measures to eradicate it. In all of these cases the owners have been given copies of the law governing their cases and advised concerning treatment. In some cases the seed has fallen on good ground, and is bringing forth fruit, but in others it fell among the briars and was apparently choked.

OTHER SPECIES OF INSECTS.

No serious outbreaks of other injurious species have been reported to me during the year, although hundreds of letters have been received concerning different species and their treatment.

The woolly aphid has been quite troublesome in Switzerland and a few other southern counties, but this is found more or less common every year in these localities.

During the latter part of the summer I received specimens of the elm borer (*Saperda tridentata*), which was said to be doing much injury to the elm shade trees in the city of Vincennes. This is one of the insects which is very difficult to treat after it once gets into the tree, and so we must depend very largely upon our friends the parasites for help in holding them in check.

The cottony maple-scale (*Pulvinaria enumerabilis*) was reported as doing a great amount of damage to the shade trees of Kentland, Newton County.

The corn-root worm (*Diabrotica longicornis*) has again been heard from, and it will continue to make itself known as long as farmers continue to grow corn after corn indefinitely.

A new species of aphid was discovered on some Houghton gooseberry plants on the grounds of Mr. George Blue, Indianapolis, where they were doing considerable damage. A curious fact about this insect was that it seemed to be very partial to that one variety. Mr. Blue had planted a five-acre field to Houghton, but there was an occasional mixture of some other variety. In no case was the mixture touched, while the Houghton plants on either side were badly damaged. Not being able to identify the species, I sent specimens to the United States Entomologist at Washington, D. C.,

who informed me that it was a new species, never before reported. As I was not able to secure the winged forms of the insect, a detailed description will have to go over till another year.

NURSERY INSPECTION.

During the inspection period, which extends from June 1st to October 1st, we have inspected one hundred and fifty-eight nurseries. Some of the old growers have gone out of business and several new ones have started in, so that the number remains practically the same. One was refused a certificate on account of the presence of San Jose scale, and several others whose stock was found to be too close to the danger line were required to fumigate all stock before sending it out. *

FINANCIAL STATEMENT FOR THE YEAR ENDING OCTOBER 31, 1904.

RECEIPTS.

Amount received from the State Treasurer on vouchers submitted to State Auditor.....	\$999 99
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EXPENDITURES.

Traveling expenses, including hotel bills and livery hire..	\$261 65
Postage, express and telegrams.....	20 42
Stationery and printing.....	41 67
Per diem of self and assistants.....	676 25
	\$999 99

President Stevens: Any questions or remarks?

Prof. Troop: I desire to say, while it is fresh in my mind, that I very much desire to get this matter before the Legislature this winter in a way that they will take some action and give us more help, and I would like very much if every one of you who are here would assist, and I hope every farmer and fruit grower will make it a point to see your Senators and Representatives and explain matters to them, so that when it comes up before them they will know what it means. These things often come before the Legislature, and before the Committee on Appropriations, and they do not know what the value of it is, and they consequently pass it by, but if you will make it a point and see your various representatives at home before they come here and explain matters and tell them just what is needed, it will go a long way.

Mr. Apple: Mr. President, the Auditing Committee have the following report to submit:

"Your committee, appointed to audit the accounts of the Secretary and Treasurer, report that they have carefully examined the books and vouchers and find them to correspond with each other, and believe them to be correct.

Respectfully submitted,

JOSEPH C. RATLIFF,
J. W. APPLE,
CHARLES N. LINDLEY."

Mr. Swaim: I move that the report of the Auditing Committee be accepted as read.

Mr. Grossman: I second the motion.

The motion was voted upon and carried.

President Stevens: We are now ready to hear the report of the committee on the President's address. Mr. Swaim, will you take the chair?

Mr. Swaim took the chair.

Mr. Zion: To the Members of the Indiana Horticultural Society—Your committee, to which was referred the annual address of our President, W. W. Stevens, report that we found pleasure and instruction in his review of the past and present horticultural conditions of the State and the urgent need of our people being instructed in modern horticultural methods and how to market their products—and that our society must also enlarge its labors, become progressive, practical and businesslike in order that it may meet and carry out the increasing demands of our horticultural people and domestic consumers—that our people may no longer be required to depend upon New York and other far away states for inferior "bulk" apples.

We have carefully considered his recommendation that the horticultural interests of our state are now in such a promising condition as to require the constant attention of a Secretary, and that our society shall have exclusive use of Room 11, according to former arrangements, or else secure other rooms that our exhibits, records and literature, may be properly cared for, and that the office be open daily to the people and the public. We recommend committees to secure financial means and rooms as suggested.

We also recommend a resolution that our Secretary be authorized to inform President Roosevelt, the Postmaster General, and our Congressmen and Senators that our society unanimously demand a parcel post

system, such as is in England, which will enable our fruit growers and gardening merchants to deliver their products to consumers at about one-fourth the exorbitant, prohibitive rates now demanded by our express companies.

J. M. ZION,
H. M. STOUT,

Committee on President's Address.

There is also a minority report.

Chairman Swaim: We will now hear the minority report.

Mr. Custer: Your committee, to whom was referred the President's address, report that we found pleasure and instruction in his review of the past and present horticultural conditions of the state and the urgent need of our people being instructed in modern horticultural methods and how to market their products, and that our society must also enlarge its labors, become progressive and businesslike in order that it may meet and carry out the increasing demands of our horticulturists and domestic consumers, that our people may no longer be required to depend on New York and other far away states for inferior bulk apples. That our society shall have the exclusive use of Room 11, according to former arrangements. We also recommend a resolution that our society be authorized to inform the Postmaster General that our society unanimously demand a parcel post system that our fruit growers, gardeners and merchants may have the benefit of such system.

All of which is respectfully submitted.

L. B. CUSTER.

Mr. Custer: I move you, Mr. President, that the minority report be accepted.

Sylvester Johnson: I second the motion.

Mr. Tillson: It may be possible that I don't hear very well, but I didn't hear so much difference. The majority report was simply a little longer. I wish the committee, or some one else, would explain the reports.

Mr. Zion: One is progressive and the other wants to keep right along in the old ruts. I think this society should be progressive. I think we should carry on the business so that it would be a credit to the state. The majority report asks for an appropriation large enough to give us a permanent office and a secretary who shall devote his whole time to the work and keep the office open as a headquarters for horticulturists where

there may be kept on exhibition specimens of fruit in its season, a museum of insect pests, diseases, etc., so that they may instruct the people and disseminate knowledge among the people who come there for it. I think we should have a concurrence in the majority report.

Professor Troop: I want to ask Mr. Zion if they made a recommendation as to the amount of an appropriation they want?

Mr. Zion: We did not do that, but we might.

Mr. Custer: The majority report is like the minority report except that it contains more. The minority report strikes out from the majority report: "We have carefully considered his recommendation that the horticultural interests of our state are now in such a promising condition as to require the constant attention of our Secretary or some other practical horticulturist." Then further we strike out: "and open such to the public." The minority report leaves these two sentences out. This is what we do not want.

Mr. Zion: I feel that I should say something more in reference to this. It seems to me that the minority wants to remain in the same old business rut, so they think we do not need to do anything further. Now we want to get out of this old, antiquated rut. We must make progress, and I do not think we are asking any too much from the State Legislature. I think we should have a room open to the public every business day in the year.

Mr. Custer: I am opposed to that.

Mr. Zion: I believe we are able to keep open a room in the city of Indianapolis every business day and every business hour in the year, and transact business, and I want this proposition properly put before the Legislature to show them why we want an increased appropriation, and how we want to use it, for I believe the Legislature will be liberal and give us the contribution if they understand why we want it. There should be some way for horticulturists who come to the city to get information and knowledge, and they could keep sending in exhibits at different times in the year. I would be glad to send specimens of my apples at different times. I am deeply interested in this matter, and if we are to remain in the same old rut our society and our state will be injured and so I am opposed to continuing the association the way it has been running for the last five years. I think we should have ten thousand dollars from the State of Indiana. The agricultural board received that sum from the State of Indiana, and why not the horticultural board. I hope the resolution that was offered by the majority of this committee

will go through. We want a headquarters and we must have money in order to have them. We appeal to you now. This is a good proposition and I think it will meet with favor so I ask that the majority report be concurred in.

Mr. Hobbs: I am in favor of the majority report with this exception: That is, let us first secure the appropriation and then we can adopt this open office method, but I think it unsafe to attempt to keep an open office before we get the appropriation. My experience with the Indiana Legislature in the last twenty-five years has lead me to believe that they are very uncertain in regard to appropriations. I am in sympathy with all progressive ideas.

Mr. Zion: If you will read our report you will see that is what it means. We suggested that a committee be appointed to petition for the appropriation for this purpose. Of course if we do not receive the appropriation we cannot have an open office.

Mr. Custer: There is nothing in your report that would indicate that.

Mr. Swain: Mr. Hobbs has the floor.

Mr. Hobbs: If we can secure a sufficient appropriation from the Legislature to keep an open house during the year I am in favor of doing it and I think thereby we will advance the horticultural interests of the state. I am not in favor of the majority report unless it carries with it the idea of the appropriation first.

Mr. Custer: Neither report referred to the appropriation first. Neither one of these reports says a word about the Legislative Committee and the appropriation.

Mr. Zion: If you'll read the report you will see.

Mr. Custer: I can not find it in the majority report. Possibly you had better find it for me.

Sylvester Johnson: I seconded the motion to adopt the minority report, and I had as I thought very good reasons for doing so. I think the majority report very impracticable in the first place. That room over there was set apart for the State Horticultural Society, but it does not control it exclusively and other organizations in the state can have their meetings there when they want to. Mr. Flick and I have met in that room every Friday, and I think that fully one-half of the time when we have come there that room has been occupied. It is used for public meetings, committee meetings, associations, etc. Other arrangements will have to be made if we keep it open permanently. The State House Custodian claims that it was set apart for meetings, etc.

Mr. Howland: It looks to me that this society needs to make progress or quit business. I think Indiana is behind the times if we cannot afford to do what Massachusetts did thirty years ago, to my certain knowledge. Thirty years ago I went to Boston and was passing along down the street and I passed by an open door and saw quite a few gentlemen standing around and I discovered that there was quite a fruit display there—everything that was growing in that season was there—and I asked what the meaning of this was. I asked them why there was so much fruit on display. They informed me that this was their custom, that they always displayed the fruit of the season in this room and the public was invited to come in at all times and inspect it and ask questions in regard to its cultivation. Now that was thirty years ago. I had the pleasure of visiting an institution of the very kind you are advocating right there in Boston. It seems to me that with the rapid strides Indiana has made in the last thirty years that we ought to have arrived at the point where we can afford to do what Massachusetts did thirty years ago. If our society is worth anything, it is worth everything to us, and we should induce the Legislature to carry on this institution by giving us the means, and in this way benefit the whole citizenship of the State of Indiana. There is no good reason why the Horticultural Society of the State of Indiana should not receive encouragement from the state. Other institutions do, and there is no good reason why we should not. I have been in many of your meetings, but I never took an active part, because I was not a fruit grower in what you might call a wholesale way. I grow enough fruit to feed my family and friends. I would be pleased to see this society take a step forward instead of backward. I think that this is a small thing to ask for. The horticulturists of the State of Indiana contributed largely to the building of this State House, and we have a right to demand certain things, and we are entitled to them. We have a right to ask for a room and an appropriation sufficient to run it.

W. W. Stevens: I have one word to add. I have considered this matter very carefully and I have nothing at interest but the success of the society, and in my address I made such a recommendation as I thought was for the best interest of the society and state. When I took into consideration that we had an appropriation of fifteen hundred dollars it seemed to me that it was time to take advanced steps, and I see nothing that we can do until we enlarge the duties of our Secretary or some one competent to give advice along horticultural lines in this state. It did not seem to me that we could do this work successfully with the appropriation we have now of fifteen hundred dollars. Two hundred and fifty dollars must go to keeping the experimental orchard. That leaves one thousand two hundred and fifty dollars. It seems to me that we might cut down our little outside expenses, but I hardly think we could cut them down that much. This would leave something in the neighborhood

of nine hundred dollars to do this work with, and I think we could then go before the next Legislature and ask for more substantial aid. In regard to this room. We have only been occupying it one day in the week. When we vacate it the other days of course the custodian will permit its use to hold meetings. When it is used by other persons it is impossible for us to keep records and things there. We have a right to an office in this building the same as the Secretary of the Board of Agriculture and the State Statistician, or any other officer that is doing state business. Whenever we occupy a room all the while, there will be no trouble in getting a room assigned to us for our exclusive use. If there is anything better than my suggestions I am ready and willing to take it up, but I do insist that we take advanced steps to advance the horticultural interests.

Mr. Tillson: In the first place we can not get a man for less than twelve hundred dollars. It seems to me that we can use the money to a better advantage than to pay it to a Secretary. I do not think it would be advisable to hire the Secretary to stay in the office.

Mr. Flick: I would like to make this statement. The reason that the Secretary does not do his work here in the office is because we can not keep our records here and I can not afford to be carrying them back and forth from the residence to the office here. We know this, that it would not necessarily cost twelve hundred dollars to keep a person in the office. It is not necessary for the Secretary to stay in the office, but the office could be kept open and someone could be there to take charge of things and answer questions at any time at a much less sum. We might have the office occupied by a young man, a woman or girl that could fill the position. She could keep up the correspondence, keep the office open, etc., and it would not necessarily cost much more that it is costing at the present time. That woman or man or girl, whoever it might be, could do the routine work in the office, and the Secretary himself could be at outside business. He could be going about over the state working up an interest in the society. We are not trying to influence anyone, but we want to get these facts before you. The State Forestry Association maintains an office with two assistants. What do they do in that office? For what does our State Statistician keep an office open with three or four assistants? Our State Board of Agriculture keeps an office open and a man, and employs a typewriter the year round. If this much work is necessary and profitable in these branches of our State Government, why not necessary in this? I think we should think of these things seriously and if we can not settle these questions ourselves in convention we should refer them to a committee and have them report on it.

Prof. Troop: It has been stated here that we can not keep our records in that room. I would like to know why it is impossible? We have desks there with locks on them, and it seems to me we could keep things safely.

Secretary Flick: When the office was turned over to me I found scarcely anything there but an empty desk and a considerable pile of books called a library. Nothing could be locked. The locks were broken. I went to the trouble of having a locksmith make new locks, but the same thing happened again.

Prof. Troop: What are the janitors in this building doing?

Secretary Flick: It is a public room and the public can come and hold their meetings because it is claimed that it was set apart in that way.

Prof. Troop: What are our custodians here for? Shouldn't they be seeing about this?

Secretary Flick: I do not see that they could do anything under the circumstances. The fact is we have lost property out of that room when under lock and key. That room is open for all sorts of meetings according to the laws governing the State House. It is open to the public for meetings. I understand there are numerous keys, so that quite a number have access to the room, at pleasure. As I understand the report we were to have some other room that would be set apart especially and exclusively for this society.

Chairman Swaim: There are other matters to come before this society this afternoon and we would like to hear this report read. It has been called for.

Mr. Zion then read the majority report.

Chairman Swaim: The question before the house is to adopt the minority report upon the President's address.

A rising vote was taken and the motion was lost.

Mr. Zion: I move the adoption of the majority report.

Mr. Howland: I second the motion.

Mr. Reed: I move, as an amendment, that this report be referred to a committee to be acted upon next year.

Sylvester Johnson: I second the motion.

Mr. Zion: This is simply a matter of killing good time. We have tried the strength of this convention, and I feel that we should proceed with business.

Mr. Howland: If that motion carries it means that this matter must go over for two years, for the Legislature will not meet again for two years. I think we should take it up at once.

Chairman Swaim: The question is on the amendment.

Mr. Hobbs: I am perfectly willing that this shall be referred to a committee with power to act favorably in case they get the appropriation. I am willing that this money should be spent in this way if we get the money to spend. I do not care to commit myself unless I know how this is going to come out.

W. W. Stevens: For your benefit I will say that I recommend it be referred to the Executive Committee with power to act. That was the recommendation.

Mr. Tillson: I move an amendment to the amendment by stating "the Executive Committee."

Mr. Reed: I accept the amendment.

A rising vote was taken and the amendment was carried.

Chairman Swaim: The amendment is carried, and the President's address will be referred to the Executive Committee with power to act. Will you now vote on the majority report?

Sylvester Johnson: I am not much of a parliamentarian, but I think when a matter has been moved and seconded and carried in reference to referring a matter to a certain committee that that is the end of it.

Chairman Swaim: I think we can take action on the majority report. This was an amendment to the report and the acceptance of the report carries with it the amendment.

It was voted upon and carried.

Chairman Swaim: Will you now take the chair, Mr. Stevens?

President Stevens: Are there any other reports, Mr. Secretary? There were some more reports to come in from the different districts. Are they in?

Secretary Flick: I do not believe they are all in, Mr. Chairman.

Prof. Troop: I move you that these reports be handed to the Secretary without reading them, and that they be included in his report.

Mr. Stout: I second the motion.

It was voted upon and carried.

President Stevens: The next thing on the program is the election of officers.

Mr. Tillson: I move you, Mr. President, that we proceed at once with the election of officers.

Mr. Swaim: I second the motion.

The motion was voted upon and carried.

Mr. Zion: I make a motion that a committee be appointed by this society to look after the furnishing of material to the Indiana Farmer for publication along horticultural lines.

Mr. Stout: I second the motion.

The motion was voted upon and carried.

Mr. Snodgrass: I do not believe, Mr. President, that these gentlemen are in order. We were to proceed with the election of officers.

Under the usual procedure the following nominations and elections were made:

Messrs. C. W. Foote, H. H. Swaim and Warder W. Stevens were nominated for President. Upon balloting Mr. Stevens was elected.

H. H. Swaim was nominated for Vice-President and upon motion was elected by receiving the entire vote of the convention.

C. M. Hobbs, Sylvester Johnson and L. B. Custer were nominated for Treasurer. Mr. Hobbs and Mr. Johnson withdrew and the entire ballot was cast for Mr. Custer for Treasurer.

Prof. Jas. Troop and W. B. Flick were nominated for Secretary. Upon balloting Mr. Flick was elected.

Mr. E. Y. Teas was elected as member of the Executive Committee.

The following were elected members of the Committee on Horticulture: W. J. Ritterskamp, Princeton, First District; W. C. Reed, Vincennes, Second District; Chas. N. Lindley, Salem, Third District; John Tilson, Franklin, Fourth District; Jas. Little, Cartersburg, Fifth District; D. E. Hoffman, Winchester, Sixth District; J. J. Milhous, Valley Mills, Seventh District; A. W. Shoemaker, Daleville, Eighth District; J. N. Snodgrass, Kirklín, Ninth District; H. W. Henry, Laporte, Tenth District; Sneed Thomas, Marion, Eleventh District; J. C. Grossman, Wolcottville, Twelfth District; C. W. Foote, South Bend, Thirteenth District.

President Stevens: The election of officers having been completed, what is your further pleasure?

Mr. C. M. Hobbs: It has been customary to appoint the Legislative Committee in open session, before adjournment.

President Stevens: I would prefer that the society appoint the committee.

Thereupon the society appointed C. M. Hobbs, John Tilson and W. B. Flick, as the Legislative Committee.

Secretary Flick: Inasmuch as Mr. Sylvester Johnson, who has declined to serve any longer as Treasurer and in which office he has served us so long and faithfully, I deem it fitting and proper to offer the following resolution:

I move you that we extend to Mr. Johnson, our faithful Treasurer, a rising vote of thanks as a small token of our appreciation of his long and efficient service as Treasurer of this society.

Mr. Grossman: I most heartily second the motion.

The motion was unanimously carried.

President Stevens: What further business have you? If none, a motion to adjourn is in order.

Mr. Kingsbury: I move that we adjourn.

Mr. Stout: I second the motion.

The motion was put to vote and carried and the President declared the adjournment.

MISCELLANEOUS PAPERS—REPORTS FROM DISTRICTS AND SOCIETIES.

REPORTS OF MEMBERS OF THE COMMITTEE ON HORTI- CULTURE FOR 1904.

(The following letter was addressed to members of the above committees a month previous to the annual meeting:)

Dear Sir—Please prepare for the annual meeting of our society, December 7 and 8, 1904, a report of the condition of horticulture in your district. We desire to obtain a full report from each district of the State. The idea being to learn the conditions of the different districts and the state at large and devise, if possible, plans for a forward movement all along the line. Your assistance is indispensable in this instance. Perhaps from two to four pages of legal cap space would be about right for the length. You might cover points of:

1. General conditions. Is there any advancement or decadence in your district in horticultural matters?

2. Farm orchards and plantings. Are farms generally supplied with orchards and fruit gardens? Are they well cared for? Why? Any new plantings? Particularize.

3. Commercial orchards and gardens. Any commercial orchards? Gardens? Give names of owners, postoffice address, and area. Is it a profitable investment? What can suitable fruit land be bought for per acre for this purpose?

4. Any forward movement with regard to the beautifying of public school grounds, country roads, parks, etc.?

5. What local horticultural and civic societies in your district? Please give name of president and secretary with postoffice address of each.

6. Suggestions: In your opinion, what is needed to better conditions in your district, etc.?

The above is merely suggestive, and you may follow your own ideas as to the nature of the report, however, avoiding the old plan of rehearsing the crop conditions of the previous seasons. Keep in mind that we want something as a basis for planning future work.

Hoping to see you and your family at our annual meeting and earnestly soliciting your active co-operation in the work of our society.

I am, yours truly,

W. B. FLICK,
Secretary.

Reports have been received from almost all the thirteen districts in time for publication.

REPORT OF CONDITIONS OF HORTICULTURE IN FIRST DISTRICT.

To the Members of the Indiana Horticultural Society:

Gentlemen—Being familiar only with conditions in Gibson, parts of Vanderburgh, Pike and Posey counties my report will not be complete as to the entire First District. The general condition of orchards in above named counties is fair, as nature has been generous in providing conditions that orchards once planted and fairly well cared for for a few years generally take care of themselves pretty well ever after.

Nearly every farm in this section has its orchard. Sometimes covering an acre, more often five or six of them, while there is quite a sprinkling of commercial orchards near Princeton, Oakland City and Hazleton, covering in most instances from forty to eighty acres of land. Quite a per cent., probably 15 per cent. of the older setting and near 60 per cent. of the newer, are pear, mostly Kieffer, and the soil and climate seem well suited to grow fine Kieffers, nearly fifty car loads of them having been shipped from the immediate vicinity of Princeton. Whether or not apple orchards are paying I do not know. Pear orchards are, while peach orchards are being cut down as unprofitable. Some of

our leading apple growers are Hon. C. A. Buskirk, Henry Yeager, A. D. Green, E. P. Downey, all of Princeton; Rev. Wm. Strickland, Francisco; Mr. Spain, Hazleton; Col. Cockram and ———, of Oakland City.

Ben Davis is the only apple grown here in quantities, while Grimes Golden and Jonathan are being liberally set in late years. Land suitable for orchards would cost from \$25 to \$30 per acre for broken, hilly sites, up to \$80 to \$100 for fairly level loam near our cities.

Gibson County will have upwards of 100 miles of rock roads when all have been finished that are now under construction and the other counties are fast following in the improved road movement. Patoka Township will have some fifty miles when those now under construction are made. Considering that all the material must be brought by rail from thirty to sixty miles distance at an enormous expense, this is a creditable showing.

If more plain and definite knowledge were spread among farmers as to how, when and what with and wherefore to spray we could have some splendid fruit. There is little spraying done here, excepting Messrs. Buskirk, Yeager, and a few others who practice it some.

W. J. RITTERSKAMP.

HORTICULTURAL REPORT FOR FIFTH DISTRICT.

The past season has been about an average one. Small fruits yielded well and prices were very satisfactory. Boxes and crates, however, were hard to get and prices higher. Some fruit lost from this reason. Cherries were short and wormy, while plums were overabundant, fine quality and light demand and low priced. Peaches were plentiful in some localities, but trees were allowed to overbear, causing fruit to be small and undesirable. Pears set a full crop but blight was the worst for years, causing not only the fruit to drop but many trees were ruined. Apples where sprayed were an average crop, but the neglected orchards were a complete failure, practically speaking. Twig blight was prevalent in most localities and did much damage to newly planted orchards of which there are some fine ones in this district. Generally speaking interest in horticulture in this district is on the wane. Most farmers have an orchard and some small fruits, but they are badly neglected and are breeding places for all bad insects and pests. Repeated trials have been made to organize local societies, but those sufficiently interested are so widely separated that not enough members can be secured in any locality.

The need for a live society in each county is manifest. Rural school grounds are unattractive, farm homes do not receive the attention they should, while roadsides are grown up with weeds and brush. This does not apply to every section, however, as we have some as beautiful country homes and well kept roads as can be found in the state, but the neglected is too much in evidence. The rush for money and attempt to run too much land is mainly accountable for conditions.

There are some paying orchards here, but land is too high priced to offer inducements to fruit growers, the price ranging from \$40 to \$100 per acre.

Berries and small fruits which seldom fail and always pay well are grown commercially, but not as much as should be.

The only hope for a change is in educating the rising generation by teaching agriculture, etc., in the public schools.

EVAN B. DAVIS.
Plainfield.

REPORT FROM SIXTH DISTRICT.

Richmond, Ind., December 6, 1904.

To the Indiana State Horticultural Society:

Your committee from the sixth congressional district begs leave to make its second annual report as follows:

I have not taken the privilege to visit other counties of my district, but to take Wayne County as an average the general conditions of horticulture have not been as good as former years, and especially last year, the late, cold spring caused much of the fruit buds to miscarry, even where there was an abundance of bloom. The apple crop generally was small, knotty, wormy, and inclined to rot on the tree, even the Ben Davis was hardly worth picking. Farmers mostly have just orchard enough for their own use, and take but little care of them. Time in their crops is too precious during spraying season for that work. I am not aware of many new orchards being set out. No doubt a systematic order of spraying would help clear the knotty and wormy ones. While our own apples are poor, the markets are full of as fine apples as ever grew, and cheap, ranging from fifty to seventy-five cents a bushel. They come mostly from the north. Pears fared much as the apple, except the Kieffer, which were fine and in abundance. The blight played havoc with most of our trees.

Peaches not much good. Last winter was too cold and the buds were killed. Wayne County and the Sixth District never had such a crop of plums as the past season, both in quality and quantity. The curculio seemed to sit back in awe of the big crop and did not bother it much.

As to smaller crops, the strawberry took on a second bloom and made a full average crop of first-class berries. Dry weather set in and spoiled the prospects of a fine raspberry and blackberry crop.

The farmers generally are not so well supplied with fruits as they should be. It is not the fault of the soil, neither so much in the climate, as pure neglect and carelessness in the farmers themselves. Those that have orchards or fruit of any kind adapted to this climate, where they put their heart and time to the work make a success. Mr. Dougherty

and Mr. Whitely, near Cambridge City, are examples. There is much land in the Sixth District that is broken and hilly, well adapted to fruits of almost any kind suitable to this climate. This land can be bought for from thirty to fifty dollars per acre, inviting anyone with but little capital who is willing to put his brains and hands to work in that direction, on the road to success.

I cannot name all the horticultural societies in this district. It is their duty to report individually to the state society. The Wayne County Horticultural Society flourishes and sends in its annual report without fail.

As to good roads and civic societies: Improvement in the way of good roads has become a necessity in order to secure rural mail routes. There has been much done in the way of grading and graveling, so that the country roads in Wayne County may be considered from fair to good. As to beautifying the roadsides by planting trees, shrubbery or otherwise, very little, if any, is to be seen. We have a civic society organized within the city of Richmond for the purpose of beautifying the city and country around about, but its work has been mostly confined to talk and essays, without any perceptible signs of improvement by the outside world. There is a great need of work along this line. Mostly, country school houses are neatly arranged, artistically built, with neat fences and shade trees surrounding them; also supplied with libraries. It seems to me one of the greatest needs of the farmer today is encouragement in the way of planting fruits, especially small fruits for domestic purposes. A majority of homes are without these delicacies only as they are bought from the gardener. This should not be. I have answered inquiries as I understand them, and filled my allotted space.

CALEB W. KING,
Member of Committee.

REPORT FROM THE SEVENTH DISTRICT.

(Composed of Marion County, Indiana.)

There seems to be quite a diversity of opinion in this district on matters of horticulture. Some sections are decidedly of the opinion that horticulture is a flat failure, that the farmer who plants trees, vines and plants for fruit is entirely behind the times, because it is an established fact that trees, vines and plants will not pay the owner anything but work and worry and produce a place to spend his money. While in other localities farmers are awake to the fact that there is money in fruits, and lots of it where the right kinds are planted and cared for.

There are many farms in the district where there is not a half dozen fruit trees to be found anywhere on the farm, and no raspberries or blackberries only those growing wild along the fence or in the woods. A grape vine can not be found. Why? A single vine costs fifty cents, and who can afford such extravagance as that? And, as to strawberries—the idea! You might know there is nothing of that kind on the farm.

There are localities where every farmer has a good orchard of apple, pear, peach, plum, cherry and quince, with an ample supply of grapes, while strawberries, raspberries and blackberries are in such abundance that it takes many hands to harvest the crop, and large loads are taken daily to market, usually with good returns. In these neighborhoods we usually find better health and more contentment than in the localities which are the opposite.

There are but three commercial apple orchards in the district, viz., W. B. Flick, Lawrence, Ind.; Ed. Eickhoff, Wanamaker, Ind., and Chris. Muesing, Cumberland, Ind. (The latter ten acres planted in the last two years.)

There have been quite a number of Kieffer pear orchards planted in the last fifteen years, but a number of these are on the decline on account of blight, some of the largest pear orchardists reporting from 75 to 100 trees dying yearly.

Many farmers plant trees each year and sow oats in the orchard as soon as the trees are planted, or before, and of course they soon become discouraged.

One great drawback in this district is the price of land, there being but little that is at all suitable for fruit growing that can be purchased for less than \$100 per acre, while a great deal of the land suitable for fruit growing is worth from \$300 to \$500 per acre.

There has been but little attention given to tree planting along the public highways from the fact that so few men have, as yet, learned the value of beauty. The school grounds are as a rule without any trees, only those supplied by nature before the school house came. Arbor day is observed in many places, but the trees are so poorly planted, and illy cared for that scarcely one in a hundred ever grows. As to parks we have none save those about the city of Indianapolis, which are becoming places of beauty.

The groves were God's first temples and today the grove is a fitting place to meet and hold sweet communion with Him.

One correspondent in answering the question, "In your opinion what is needed to better conditions in your part of the county?" says, "Every man to vote the Republican ticket at our elections, to vote all the saloons out of existence and kill all the dogs and drive the 'nigger' back to his home in the south. There are other things badly needed here. We need more ready cash here in Perry township to buy votes with, and we have a few chicken thieves to spare."

I think this is a fair sample of many of the would-be horticulturists, getting some things where they ought not to be, and doing others which are ridiculous in the extreme, hence, with them horticulture is a failure.

J. J. MILHOUS.

For Eighth District report see page 49.

Report from Ninth District received too late for this report.

HORTICULTURAL REPORT, TENTH DISTRICT.

The Tenth District is composed of the counties of Laporte, Lake, Newton, Jasper, Starke, Pulaski, White, Benton, Warren and Tippecanoe. The north border is Lake Michigan, and is cut in two by the Kankakee River. The valley of the Kankakee has been a low marsh, mostly covered with water, but the past few years have made a wonderful change in this part of the district. The river was dredged and cut into one deep channel. Land that was nothing, ten years ago, but bogs and the home of the bullfrog, snipe, dogfish and the residence of the hunter and fisher, has been turned into valuable farms that are covered with corn fields, the finest in the State. This land, which fifteen years ago could be bought for \$2 per acre, is now, much of it, worth from \$40 to \$75 per acre. This valley and black prairie soil found in most of the counties, especially Newton, Pulaski, Starke, Benton, Jasper and White, I do not think will ever be a fruit growing section. It is all right for small fruit, but is not the soil adapted to the growing of tree fruits.

The north tier of counties, including Laporte, Lake and Porter, contain soil and conditions that are suited to the growing of all kinds of fruits. This strip runs through the central part of the counties and is from twenty to twenty-five miles wide. The south shore of Lake Michigan and inland three to five miles, in most places a very light sand, is not good for fruit. The climate conditions are not the same on the south side of the lake as on the east, where are located the great peach belt of Michigan. The reverse seems to be the condition, as peaches will not do as well along the south shore of the lake as they will farther inland. We raise better peaches twelve miles south of the lake shore than they do close to it, and get a crop oftener.

Along that strip of land, which I have described above as being suitable to fruit culture, there has been in the last ten years considerable advancement. There has been a large number of orchards planted, none on a very large scale, but I believe that they will run up into the hundreds that will go beyond an acre or more. There has been an improvement in the care of old orchards, but the improvement along this line has not been as great as it might be.

E. S. Smith, of Westville, is one of the best apple-growers in the northern part of the district. His orchard is kept in an up-to-date condition by proper cultivation and spraying. His apples consist mostly of Prolific Beauty, Baldwins, Jonathan, Northern Spy and a few scattered varieties. He has a cold storage in connection with his orchard and markets most of his apples during the season at retail, or direct to the storekeeper.

Dr. O. L. Sutherland, of Laporte, has the next largest orchard in the northern part of the district. His orchard is not kept in as good a condition as it should be. He also has a large orchard of peaches, plums and some pears.

Wm. M. Walton, of Laporte, is a new convert to fruit-growing. His orchard is about eight years old, and consists of plums, peaches, pears, cherries, currants and gooseberries, covering about thirty acres. It is in the pink of perfection, and several thousand bushels of plums were sold this season. His orchard is an honor to the fruit-growing industry, and a good object lesson. He is an enthusiast of the first class.

A. J. Barnard, of Porter county, has a large pear, cherry and plum orchard about six years old. He is also quite a small fruit grower.

Sam B. Wood, of Lake county, postoffice Lottievillie, has planted several hundred fruit trees in the last few years, consisting of apples, cherries and peaches.

James Hamilton and George Biglow, of Porter county, planted 1,000 cherries nine years ago.

There has been several thousand peach trees planted in Laporte county during the past two years. I could continue this list indefinitely, and on the whole I think horticulture in this part of the district has held its own and has made some good advancements.

I have some thirty acres in orchard and small fruits myself. All have been planted in the last ten years. The planting of trees and small fruits, in the past ten years which has come under my personal observation will amount to at least 300 acres. Some of these plantings have been a failure on account of the carelessness of the planter. But where the plantings have received proper care and cultivation they have proved a valuable investment, emphasizing the fact that the soil and climate conditions are suitable to fruit growing, if the right man is at the helm. There is no cheap land in this district suitable for fruit growing. Most of the good fruit farms and orchards are on land worth from \$60 to \$150 per acre. All the land I am using for fruit growing cost me \$150 per acre, without any improvements. Mr. Walton, referred to above, paid \$200 per acre for his land.

I confess I am not personally acquainted with the southern part of my district, as it is one of those "shoestring" districts, longer than the moral law, and takes in Tippecanoe county, the seat of the best school in the State, and also the home of more State officers than any other county in the State, and the home of our friend, J. M. Zion, of Clarks Hill, an apple grower of State and national reputation; a man we are proud of having in our district. While I never had the pleasure of visiting or seeing his orchard, I am sure that it is kept up-to-date and an excellent example for horticulturists to follow. Most of us have had the pleasure of seeing his apples at our meetings and at the State Fair, and without his assistance at the World's Fair one of the best parts of the display would have been lacking. Taking out the Kankakee marsh, the Lake Michigan sand knolls and the prairie land of the district, I am safe in saying that the Tenth District can make as good a showing as any other

part of the State and that there has been satisfactory improvement along all lines of horticultural work during the last ten years, and that we are in good condition to keep them up and moving.

H. W. HENRY,
Laporte, Indiana.

For report from Eleventh District, see page 51.

ANNUAL REPORT OF J. C. GROSSMAN, COMMITTEEMAN FOR THE
TWELFTH DISTRICT.

To the Indiana Horticultural Society, in annual session December 7 and 8, 1904:

Mr. President and Members of the Society—I respectfully submit the following report:

The Twelfth District is composed of the counties of Steuben, Lagrange, Noble, Dekalb, Allen and Whitley, situated in the northeastern corner of the State. These six counties are the eastern portion of the northern fruit belt and are in the celebrated lake region of Northern Indiana. The study of the topography and geology of the district discloses hundreds of excellent orchard sites that would be the equal of any section in the State if some one with capital would develop them.

Our Secretary sent me a suggestive outline, embracing a number of questions along horticultural lines as an aid in making up my report, in order to bring out certain facts relative to the present horticultural conditions of the district.

This outline I have endeavored to follow as far as practicable, and as a further aid towards having this report accurate and reliable, I sent the same questions to several persons in each county in my district, asking them to report to me. A number of them complied with my request and I incorporate their replies in my report.

Following are the questions sent out:

(1) General Conditions.—Is there any advancement or decadence in horticultural matters?

(2) Are farms generally supplied with orchards and fruit gardens? Are they well cared for? If not, why? Any new plantings?

(3) Any commercial orchards? (Give names of owners and postoffice address.) Is it a profitable investment? What can suitable land be bought at per acre for this purpose?

(4) Any forward movement in the beautifying of country school grounds, public roads, parks, etc.?

(5) What local horticultural and civic societies? Give names of society, President and Secretary, with postoffice address.

(6) In your opinion, what is needed to better conditions in your district?

We received replies from seven correspondents up to the evening of the 6th.

W. F. DeVilbiss, Fort Wayne, Allen county, reports:

1. General conditions, of recent years, have improved. Yet most farmers haul apples to market in bags or in open wagon beds.

2. Most farmers have apple orchards, but few fruit gardens. Both are cared for as the ordinary farmer does this work.

3. There are six or seven who make fruit growing a specialty: Henry Tilbury, Fort Wayne; Israel Luther, R. R. 4, Fort Wayne; James Sheridan, Fort Wayne; Samuel Kinsey, Harlan; James Baxter, R. R. 3, Fort Wayne; W. F. DeVilbiss, R. R. 4, Fort Wayne. Yes, it is a profitable investment. Suitable land can be purchased for from \$75 to \$100 per acre.

4 and 5. Very little. The Civic Improvement Society, of Fort Wayne, and the Home Makers' Association of Allen County are working along these lines.

6. More public spirited men and women.

H. M. Widney, St. Joe, Dekalb county, reports as follows:

1. About holding our own.

2. Think there is a decrease in farm orchards. Not properly cared for. Cause—Neglect and lack of interest. But few new plantings.

3. Yes. Howard Northrup, J. D. Leighty and H. M. Widney, all of St. Joe. Cherries and apples are profitable, but peaches and plums a failure. Price of orchard land, \$45 to \$100 per acre.

4. Some; not near what it should be.

5. One Farmers' Club at St. Joe. Also, our county organization in support of Farmers' Institutes. Farmers' Club: H. M. Widney, President, St. Joe; R. Wyatt, Secretary, Auburn. Dekalb County Farmers' Institute: President, H. M. Widney, St. Joe; Secretary, M. S. Delving, Sedan. No horticultural society.

6. A rousing horticultural society. We are debating the feasibility of this matter now.

A. G. Lodewick, of Auburn, Dekalb county, makes the following report:

1. There is a decadence in horticulture in this county.

2. No. No. Neglect. Very little.

3. I know of no commercial orchards in full bearing. I consider apples and cherries profitable. From \$50 to \$100, depending on location.

4. Some improvement.

5. There is no horticultural society in the county.

6. The land well adapted to profitable general farming, and farmers not inclined to assume the extra work and chances of fruit growing. More thorough spraying, trimming and cultivation would improve the conditions of orchards already set.

J. W. Moorhouse, Albion, Noble county, Secretary Noble County Horticultural Society, reports:

1. There is marked advancement along some lines of horticulture, especially in vegetable growing.

2. They are. But most orchards should be replaced with new trees. Gardens are often poorly kept.

3. Not to my knowledge. At least there are no orchards worthy the name of commercial orchard. Land suitable to apple growing can be bought for about \$60 per acre.

4. Yes; there is.

5. We have a Grange at Albion. P. J. Stanley, President, Albion; Forest Parker, Secretary, Albion.

6. Better management, more hard work and absolute free trade.

Wm. E. Kinsey, Salem Center, Steuben county, makes the following report:

1. There is a growing tendency in fruit growing as in other kinds of business, to specialty.

2. Orchards are not being planted as fast as they decay, but a few are planting largely and make it a business to supply local demands.

3. There are some commercial orchards, viz.: Jerry Dutter, Angola, Ind.; ——— Johnson, Ashley, Ind.; Frank Johnson, Hudson, Ind. I have 2,000 plum, 400 peach in bearing. Land suitable for fruit growing can be bought at prices from \$50 to \$75 per acre, owing to location and improvement.

4. No; not as to school grounds or parks. Road improvement is gradual and constant.

5. None to my knowledge.

6. Anything that will create and maintain an interest. The dollar is what all are hunting for. Show them that it will pay and you have them.

Angola, December 4, 1904.

Mr. J. C. Grossman:

Dear Sir—Your letter of the 29th inst. came to hand, but was delayed in transit, so my reply will be later as a result. I am not well prepared to give the information you wish, as I am engaged in general farming and know but little of horticulture, but will do the best I can in a general way. To the first would say, there is an advance along these lines; no organized movement, but one that is obvious to an observer.

Farms are not generally well supplied with orchards and fruit gardens, but while orcharding may have declined, fruit gardening has certainly much advanced in the last ten years. Orchards are not generally well cared for. Where a farmer has but a few trees or small orchard, he is almost certain to neglect to properly care for his trees.

From my observation farmers are yearly planting trees, apples, peaches, pears, etc., but to neglect them or let them take their chances. "Twas ever thus."

There are but few commercial orchards in the county. There is a plum orchard in the west part of the county, owned by W. E. Kinsey, address Hudson, Ind.; the Highland Fruit Farm, once owned by L. D. Creel, now owned by Samuel Geely, Fremont, Ind., who is continuing the business of orcharding small fruits, etc. Jerry Dutter, Angola, Ind., is a raiser of fruits and berries. He has been in the business for many years and has made a success of it. The business is profitable if conducted with care and system. With regard to the price of land suitable for the business, will say that such land might be bought a few miles from a town or railroad station for \$50 per acre; would be worth \$75 or more near Angola.

There is no movement in the beautifying of school grounds, as far as I have observed, and very little in roads or parks. The movement with respect to schoolhouses seems to be in providing them with libraries, which has been quite successful. I will not point out the difficulties of beautifying school grounds; they must be obvious to you. There are no horticultural societies in this county that I know of. A good, live horticultural society would no doubt be of great benefit in this county in increasing the interest in fruit growing, and would lead to better methods of culture and lead up to a higher appreciation of this noble vocation. More civic organizations and more discussion of these subjects at our Farmers' Institutes would awaken an interest in the matter of beautifying our homes by the raising of flowers and fruits, and through this awakening to the making of the waste places glad, of which there are many, both along public roads and on farms and about farmhouses. There are two florists at Angola—Judge S. A. Powers, who is engaged in the business, and Mr. Ford Carpenter, living one and one-half miles out of the town, who is engaged in the business of raising flowers. His specialty is carnations, of which he has a great number. Both of these gentlemen have a genuine love for the business, no doubt, and are making a success of it. Would be glad if my knowledge of horticulture were such as to enable me to give you more information. Have written this very hastily, and if it will do you any good shall be gratified.

Yours very truly,

CHAS. M'CLUE.

Fremont, Ind., R. F. D. 4.

Van Buren Township, Lagrange County, December 2, 1904.

There is not much doing in this township along horticultural lines. Most farms have apple orchards, planted years ago for farm use, and which receive but little care from year to year. The reason for neglect is probably because the owners lack enterprise and genius to improve their holdings. Some years ago on hilly land in the west end of the township grapes and peaches were extensively planted, but now have gone back to nothing in neglect.

I am sorry to say no farmers' clubs or mutual improvement associations exist for the object of improving or beautifying any local natural conditions.

Louis Fetch, Shishewana postoffice, has planted many peach trees and sells the product in local markets. William Benham has an acre of strawberries and has begun to plant peach trees for commercial purposes. White Pigeon postoffice. Otherwise very little or no interest is manifest in new plantings of fruits.

Commencing in 1882, I planted, mainly for farm use in view, and, incidentally, for what commercial advantage there might be in it, three acres of new orchard—40 varieties of apples, 10 of pears, 5 of peaches, 5 of plums, walnuts, chestnuts, blackberries, dewberries, raspberries, strawberries—and since have had a good succession of fruits. Droughty summers and hard winters have curtailed success quite a little, and my choicest varieties of grapes, plums and peaches have dwindled out. In the light of success and failure, I will commence next year to plant peach trees for what pleasure and profit there can be had in so doing. I believe it best for those who have the ability and inclination to set a good example of thrift in a neighborhood, to exhibit a well-kept orchard, garden and home grounds. And then the meeting of a good, live horticultural society in such a vicinity will be an added incentive to further the cause of fine-tilled farms and well-kept homes.

I see by your letterhead you have nursery stock. What is it you have to distribute?

Respectfully,

L. E. FERGUSON.

White Pigeon, Mich.

Summarizing the reports received, with my own knowledge of the conditions of the district, we find that, though the farmers generally are not keeping up the original orchards to their former size, they are aiming to keep orchard enough to furnish fruit for their own needs. The interest in some portions of the district is gradually increasing. There is not very much attention paid to trimming, spraying and cultivating generally, owing to lack of time and proper apparatus for doing the work. The new plantings are usually small, but of the newer and better varieties, and with fewer varieties, with an occasional specialist, whom we find

in each of the counties, who are planting more extensively. In addition to the commercial orchardists mentioned in the letters already given, Mr. George Febles, Kendallville, Noble county, Indiana; H. E. Hoak, Ligonier, Noble county; Charles Harrah, Wolcottville, Noble county; Marion Garmire, Lagrange, Lagrange county; the Ellison Farm, Lagrange, Lagrange county, and myself, all have orchards of recent planting for commercial purposes.

With the proper care and conducted in a businesslike way it is a profitable investment. Suitable land in the several counties can be bought at from \$40 to \$100 per acre, according to location and improvements. There is some movement in the beautifying of school grounds, but not so much as there should be. Public roads in the district have been gradually improved, so that in many townships they are not excelled. There is a general advance in the care of home grounds, and many farms are now named, the name usually being symbolic of the natural location, scenery surrounding the homestead or of the specialty of the farm. The natural parks surrounding the hundreds of beautiful lakes of our district are being improved by the building of many beautiful and artistic cottages, with fine lawns and flower beds. We have two very lively and enthusiastic Horticultural Societies in the district, viz.: the Noble County Horticultural Society, of which J. C. Kimmell, Ligonier, is President, and J. W. Moorhouse, Albion, Secretary. This society has been organized seven years and has made a good growth both in interest and numbers, they having the largest membership of any society in the State. The Lagrange County Agricultural and Horticultural Society was organized four years ago and we believe it has been of much practical benefit to the county. I believe the interest in Dekalb county is sufficient now for an active society there. All that is necessary is the organization, which, no doubt, will be perfected this winter, more such societies in the district and some good business men with capital to push the commercial orchard business.

REPORT OF THIRTEENTH DISTRICT.

There has been a steady advancement in horticultural interests in the Thirteenth District for a number of years, but there is still room for improvement. I do not know how this could be except through local societies. Taking our local society as an example, I think would be proof enough for me that if there was a horticultural society in every county throughout the State, horticulture would make great strides in the future. In speaking of our society—I mean the St. Joseph Horticultural Society—we have twelve meetings a year. We meet at the home of some member the last Saturday of each month. We take plenty to eat, stay all day and discuss matters pertaining to horticulture, have a literary program and a good time in general.

Farmers as a general thing are not well supplied with fruit gardens. They seem to think they have no time to look after one, and to judge from the average farm fruit garden it would look that way.

There are no large commercial orchards in the Thirteenth District, but several small ones that are paying the owners a good profit. There are good opportunities for the man with push and energy in this district, as we have a diversity of soil to choose from. Land can be bought reasonable that will grow all kinds of fruit adapted to our climate.

Speaking of the price of land, it is largely owing to the location. It can be bought within three or four miles of South Bend for from \$60 to \$100 per acre, and South Bend is one of the best markets in the world.

There is not much of a forward movement in regard to the beautifying of country school grounds. There has been something done along this line by the teachers and pupils on Arbor Day.

The public roads in a great many localities are sadly neglected, while in others there are fine gravel roads with shade trees on each side, presenting a beautiful appearance. The reason for this is that the localities having good roads are well supplied by nature with material for the making of roads, while the others are not so fortunate.

C. W. FOOTE,

Vice-President Thirteenth District.

REPORT OF THE LAGRANGE COUNTY AGRICULTURAL AND HORTICULTURAL SOCIETY.

The year which has just closed has been the most prosperous one in its history. Everything is harmonious. Financially, it is on a sound basis for another year's prosperity. The members are active and full of interest. It has held six regular meetings. The attendance has been good at all meetings. Programs have been more than full.

The President, Mr. J. C. Grossman, and the Secretary, Mrs. Lizzie C. Royer, have been present at every meeting. Every meeting has been reported by the Secretary to the four county papers. Every meeting has had a most excellent display of some kind. Premiums have been awarded to the sum of \$11.80.

Held the June meeting jointly with Noble County Society at Island Park, Rome City, Noble county, Ind.; had 3,000 year books printed and distributed; sent two delegates to Indiana Horticultural Society—Mrs. D. B. Schaeffer and Miss Myrtie Vankirk; made a fruit exhibit at State Fair through Messrs. Leroy Eshelman, A. H. Bogue and J. C. Grossman, with the assistance of other members and the county at large and carried off the sweepstakes of \$50 for best county exhibit, and other premiums and sale of fruits to the amount in all of \$143.

Eighteen heads of families have been added to our membership list. Current expenses for the year, \$334.82; on hand, \$132.81.

At the December meeting the following officers were elected and committees appointed:

J. C. Grossman, President; A. H. Bogue, Vice-President; Mrs. Lizzie C. Royer, Secretary; Marion Garmire, Treasurer.

Executive Committee—J. W. Mills, Leroy Eshelman and Charles Smith.

Program Committee—Mrs. J. W. Mills, Mrs. A. H. Bogue, Mrs. J. Low, W. T. Clugston, E. C. Wemple and Charles Rowe.

Music Committee—Misses Edith Mills, Edith Eshelman, Huldah Sears, Veva Deal, Jessie Sherman, Bessie Appleman and Russell Smith.

Exhibiting Committee—L. L. Eshelman, A. H. Bogue, C. C. Smith, J. W. Low, Myrtle Vankirk, Mary Grossman and Sam Rowe.

Membership Committee for State Society—J. C. Grossman, J. W. Low, R. H. Newman, J. W. Mills, Mrs. D. B. Schaeffer and Rile C. Case.

Membership Committee for Local Society—Mrs. R. C. Case, Mrs. Charles Smith, George Roy, C. W. Sears and Mrs. O. A. Lampman.

MRS. LIZZIE C. ROYER,

Secretary.

REPORT OF THE WAYNE COUNTY AGRICULTURAL AND HORTICULTURAL SOCIETY FOR 1904.

BY WALTER S. RATLIFF, SECRETARY.

I herewith submit the annual report to your honorable body of the Wayne County Agricultural and Horticultural Society for the present year, with a resume of the agricultural and horticultural conditions in this section of Indiana.

This society has been holding its regular meetings for almost half a century, having organized in the city of Richmond in 1856, as the Richmond Horticultural Society, which name it maintained for several years, or until its reorganization.

The summer sessions are usually held at the residence of some of its members, or in some of the public parks that are to be found in various portions of the county. At such meetings, well-filled baskets are usually taken and the members and their friends spend the day socially, and in the consideration and comparison of the products of the field, orchard and garden that are to be found on the exhibition tables.

The annual festival dinner in February is unique and successful. From premium lists previously issued our lady members good-naturedly vie with one another in their competition for premiums on their culinary articles that are taken, which are afterwards placed on the large dinner tables, making the feast complete.

Officers for 1904: President, Oliver Burgess; Vice-President, Stephen Kuth; Secretary, Walter S. Ratliff; Treasurer, T. E. Kenworthy, and Corresponding Secretary, Hon. Joseph C. Ratliff.

Our organization, until within later years, has united with the Richmond Fair and Trotting Association, which has been holding county fairs east of this city, and it has had charge of the exhibits of seeds, grains, vegetables, fruits, flowers and culinary articles.

AGRICULTURE.

The average farmer has not been blessed as in former years in basket and in store, as a combination of circumstances hath otherwise decreed; but has been able to grow, harvest and dispose of his products without any very material losses.

Wheat—The past harvest was relatively a failure. The severe winter and spring, together with the attacks of the fly and isosomas rendered the crop practically worthless. Many fields were early sown to oats or plowed for corn, and of those remaining but an occasional one, when cut and threshed, yielded grain that could have but a low rating. The recent sowing did poorly, owing to the protracted drouth following seeding time, and with serious ravages of the fly on the young plants, it has not entered the winter in a very flattering condition.

Corn—A large acreage. The late, wet spring retarded planting, followed by a long spell of dry weather. August showers greened up growing corn, and with late frosts, this maize made a late growth, ripening unevenly and slowly. At cribbing time the ears were largely soft and chaffy, with a yield of but 35 to 45 bushels to the acre.

Oats—An unusual crop of fine straw and grain. The season being most favorable, an occasional yield of 60 bushels to the acre was harvested.

Hay—Clover was heavy and saved in fine condition, but timothy was light and not very tall, but with a small acreage of the latter, the prices for hay have induced farmers to part with all they can handily spare.

Live Stock—Low-priced cattle, milch cows and hogs have had a depressing effect on feeders, and apparently fewer marketable animals have been offered. Later feeding has been advocated to utilize the unsound grain.

FRUITS.

The average fruit man has not been pleased with his year's work in his plantations and orchards. With a profusion of bloom, the prospects were flattering, but the later frequent showers interfered with successful spraying with poisonous solutions, and the late frosts lessened the prospects of the early blooming varieties. A very light consignment of nursery stock was planted this year.

Apples—Summer and early autumn varieties were not only abundant, but comparatively free from defects. Winter apples were fewer, wormy, of smaller size and damaged by the bitter rot in most of the orchards in this locality. So that at gathering time but few of our farmers had sufficient quantity of them to supply their needs.

Pears—With a few exceptions, the crop of pears equalled that of former years, with fruit of good size and excellent flavor. Notwithstanding the blight of the trees was bad in many orchards, but few serious losses have been noted from the entire loss of the trees. In this locality the summer and early autumn varieties appear to be mostly grown.

Plums—But few plum trees that were not well laden with this excellent fruit, and users of it have had a good opportunity of testing the merits of all varieties. The Bradshaw, Abundance, Burbank, Greengage and Lombard are the greater favorites. Doubtless the home market has not for some time been as thoroughly and satisfactorily supplied as during the present year.

Peaches—An occasional locality in this section had trees that ripened a very fair crop of fruit, apparently regardless of protection from wintry winds. So uncertain has peach growing become that few orchards are being set for future bearing.

Cherries—The shortness in the cherry yield was doubtless due to the late frosts near blooming time. Early varieties were almost an entire failure, and those later sorts ripened rather poorly. Many trees have been recently set, embracing our standard varieties.

Quinces—But few quinces grew in this locality. The supply of this fruit has been inadequate for many years, which, with the ease of its propagation, should be an incentive to grow them more universally.

Grapes—Not overly plenty. The late frosts evidently are responsible for the shortness in the number of ripe bunches of this luscious fruit. Among the most popular kinds of later introduction is the Brighton, which should be grown in every door-yard.

Strawberries—The yield was only one-half of an average, and they not of the best. Too late freezes are said to have been the cause, the early settings of fruit stems being chilled. With the present demand for ripe strawberries, an opportunity is afforded for additional plantations for berry growing in this locality, at least.

Raspberries and Blackberries—Both almost entire failure, owing to the dry weather covering the period of summer when the canes needed moisture to mature the fruit. But few fruit men spend much time in the cultivation of these berries, owing to their uncertainty in growth and fruiting.

ORNITHOLOGY.

The interest manifested in the study of birds in recent years by the general public has been universal as well as problematic, judging from the number of Audubon Societies and similar organizations that are found in this and other States, and the introduction of the study of ornithology into schools and colleges. By the protection afforded through the influence of these organizations and favorable legislation, many of our more common birds have of late very materially increased in numbers. With this increase, their depredations in the orchard and field have kept apace, until the husbandmen have already, from the serious losses thus sustained in fruits and grain, begun to question the advisability of further protection.

INDIANA HORTICULTURE AT THE ST. LOUIS WORLD'S FAIR.

BY W. B. FLICK.

The Legislature, at the session held in 1903, enacted a law appropriating one hundred and fifty thousand dollars (\$150,000) to bear the expense for making a display of the State's resources at the Louisiana Purchase Exposition, to be held at St. Louis, Mo., May 1 to December 1, 1904, and providing for the appointment of a Board of Commissioners, one from each Congressional District and two at large, to manage the same. Newton W. Gilbert, Fort Wayne; Henry W. Marshall, Lafayette; J. W. Cockrum, Oakland City; W. W. Wicks, Bloomington; W. W. Stevens, Salem; W. H. O'Brien, Lawrenceburg; Crawford Fairbanks, Terre Haute; D. W. Kinsey, New Castle; Nelson A. Gladding, Indianapolis; Frank C. Ball, Muncie; C. C. Shirley, Kokomo; Fremont Goodwine, Williamsport; Joseph B. Grass, Huntington; S. B. Fleming, Fort Wayne, and M. W. Mix, Mishawaka, were named by Governor Durbin to be the commissioners. At their first meeting Newton W. Gilbert was elected President, H. W. Marshall, Vice-President, and J. W. Cockrum, Secretary. Warder W. Stevens, Fremont Goodwine and W. H. O'Brien were appointed a Committee on Agriculture, Horticulture and Live Stock, and to manage these displays. This committee appointed a sub-committee entitled "Special Committee on Horticulture," composed of W. B. Flick, Lawrence; Sylvester Johnson, Irvington, and J. C. Grossman, Wolcottville, to make and manage the State's horticultural display at the World's Fair, and five thousand dollars (\$5,000) was set apart for this purpose. The committee sent out circular letters to farmers, fruit-growers and horticulturists, soliciting exhibits and giving details and directions how to select, pick, pack and ship fruit. It was thought best and least expensive by the committee to store the fruit here

at Indianapolis until the week immediately preceding the opening of the World's Fair, when it could be shipped at car-load rates, to St. Louis. There was procured in this way and by purchase about four hundred bushels of apples suitable for the tables, less than one half the quantity desired. The crop of both apples and pears was very scanty and of poor quality throughout most of the State this year, which caused this shortage in stored stock. The committee solicited bids at St. Louis for the construction of the booths, tables, etc., but rejected them all on account of their exorbitant prices, the lowest of which was fifteen hundred dollars. The contract was let to an Irvington contractor, at a saving of nearly one thousand dollars, whose work was conceded to be the most complete and best finished in Horticultural Hall. Green china plates were made especially for this fair, of which Indiana ordered 90 dozen, but received only 45 dozen.

Indiana was one among the three or four states that were ready for the opening day, May 1. She received 100 per cent. on opening, and had her tables full of apples and pears equal to the best there and superior to most.

The fruit had come out of cold storage in fine condition, some of it even with a slight bloom on it, as if just picked from the trees. The fruit was not rubbed at any time to brighten it up, but was put on the tables with the "dew on." This was thought best by the committee and was also in accordance with the rules of the L. P. E. A most excellent display was kept on the tables which run down slightly through part of August and September, when the cold storage fruit was about exhausted and the new crop was not available. As soon as the new crop could be drawn on, the display assumed, in quality, a superlative degree, and in quantity no inferior rank. Indiana showed a wide range of varieties of well-grown apples, her exhibit having about two hundred varieties. She made a reputation for well grown, well flavored and highly colored apples for commercial purposes. A few of the poorer quality of commercial apples were on the tables, but not enough to attract attention, while most all the display of some states were of these varieties. The display of watermelons from Knox County, which were not classed in the Horticultural Department, were the largest and finest at the fair, and it is a pity that they could not be judged for prizes.

On account of the exorbitant charges for transportation, expressage and privileges, which threatened to absorb all the appropriation for the horticultural display, the commission could not, like other states, engage a superintendent to stay at St. Louis and have charge of the exhibit all the time, but concluded to let different horticulturists of the State take charge at different times. Among those who had charge were Sylvester Johnson, W. B. Flick, J. C. Grossman, Geo. P. Campbell, Mr. Millhous, Mrs. W. W. Stevens, John Barnett, Evan Davis, Amos Garretson, Chas.

N. Lindley, Jas. M. Zion, E. A. Robison, H. W. Henry, H. H. Swaim, A. H. Bogue, A. W. Shoemaker, Otto Zink, H. M. Stout, John Tilson, R. L. Beck, Fred C. Dickson and Leon Arbuckle.

There were about two hundred exhibitors in all (a part of the papers were lost, and the exact figures are not known).

Among those who deserve special mention as making large and excellent displays, are Thos. T. Newby, of Carthage; Jas. M. Zion, of Clarks Hill, and Joe A. Burton, of Mitchell, who each were awarded a gold medal for their displays. (For others who made fine displays and carried off honors, see the list of awards hereunto appended.)

There were used and put on the tables, altogether, about fifteen thousand (15,000) plates of fruit, nuts, etc., and about 900 bushels were used for this purpose. On an average, a plate of fruit remained on the tables about ten days or two weeks, then was replaced with fresh specimens.

Indiana, seemingly, had more visitors in Horticultural Hall than any other state, and although not keeping a registry book all the time, over seven thousand Hoosier visitors wrote their names in our book. All were made welcome and seemed to enjoy the hospitality. Indiana's sons and daughters, especially, were pleased to find their native state so nicely and cosily fixed for the home people to rest.

Of the amount (\$5,000) set apart for this display the committee turned back an unexpended balance of one thousand dollars* (\$1,000).

The members of the State Horticultural Society deserve the thanks of the State for the honors won by Indiana's horticultural display, as nearly all the exhibitors were members of this society, and the managers and attendants were also members and officers.

In all, there were one hundred and twenty-three medals awarded to this display—four gold, twenty-eight silver and ninety-two bronze medals, as follows:

The following exhibitors were awarded medals as follows:

State of Indiana for fruit, nuts, etc.....	Gold medal.
Joe A. Burton, Mitchell, apples and pears.....	Gold medal.
Thos. C. Newby, Carthage, fruit.....	Gold medal.
Jas. M. Zion, Clarks Hill, fruit.....	Gold medal.

SILVER MEDALS.

St. Joseph Co. Hort. Society, South Bend, apples.....	Silver medal.
L. L. Athey, Madison, dewberries.....	Silver medal.
M. C. Beard, Edwardsville, plums.....	Silver medal.
John Bellville, Grandview, apples.....	Silver medal.
Geo. W. Burton, Orleans, apples.....	Silver medal.
John J. Charles, Lagrange, apples.....	Silver medal.
Henry Cornelius, Wolcottville, apples.....	Silver medal.

*Not exact figures.

Henry Cramer, Wolcottville, apples.....	Silver medal.
Mrs. B. A. Davis, Laporte, fruit.....	Silver medal.
W. F. DeVilbiss, Fort Wayne, fruit.....	Silver medal.
Mrs. Lucy Farnaman, South Bend, apples.....	Silver medal.
W. B. Flick, Lawrence, fruit.....	Silver medal.
Amos Garretson, Pendleton, raspberries.....	Silver medal.
J. C. Grossman, Wolcottville, fruit.....	Silver medal.
Chas. Harrah, Wolcottville, pears and apples.....	Silver medal.
Samuel H. Hazelett, Greencastle, apples.....	Silver medal.
H. W. Henry, Laporte, fruit.....	Silver medal.
J. S. Henwood, Centerville, apples.....	Silver medal.
Chris King, Rushville, plums and apples.....	Silver medal.
Elam Osborn, Economy, apples.....	Silver medal.
W. J. Ritterskamp, Princeton, apples and peaches.....	Silver medal.
Reed & Fielding, Glenwood, apples.....	Silver medal.
H. H. Swaim, South Bend, peaches and grapes.....	Silver medal.
J. W. Todd, Lagrange, apples.....	Silver medal.
Chas. A. Thurston, St. Joe, apples.....	Silver medal.
Barney Waldron, Wolcottville, apples.....	Silver medal.
S. T. S. Williams, Knightstown, apples.....	Silver medal.
Geo. Wright, Mitchell, apples.....	Silver medal.

BRONZE MEDALS.

Harrison County Agricultural and Horticultural Society,

Corydon, fruit.....	Bronze medal.
Lagrange County Horticultural Society, Lagrange, fruit....	Bronze medal.
Marion County Agricultural and Horticultural Society, Indi- dianapolis, nuts.....	Bronze medal.
Noble County Horticultural Society, Albion, apples.....	Bronze medal.
Albertson & Hobbs, Bridgeport, fruit.....	Bronze medal.
Wm. H. Andrews, Wolcottville, apples and plums.....	Bronze medal.
N. Augustine, South Bend, apples.....	Bronze medal.
S. L. Barnes, Richmond, apples.....	Bronze medal.
R. L. Beck, Connersville, apples and peaches.....	Bronze medal.
J. C. Bieler, New Albany, apples and peaches.....	Bronze medal.
Blue Bros., Indianapolis, fruit.....	Bronze medal.
A. H. Bogue, Lagrange, apples.....	Bronze medal.
C. P. Bradley, South Bend, apples.....	Bronze medal.
S. L. Bricker, Shipshewana, apples.....	Bronze medal.
A. W. Brewer, Corydon, fruit.....	Bronze medal.
W. H. Bruce, Bartholomew County, nuts.....	Bronze medal.
Jno. S. Burgess, Moberly, fruit.....	Bronze medal.
Geo. P. Campbell, Bloomington, peaches and plums.....	Bronze medal.
Jno. V. Chamberlain, Bloomington, apples and pawpaws....	Bronze medal.

Wm. Chrysler, Lagrange, apples.....	Bronze medal.
Corydon Fair Association, Corydon, apples and pears.....	Bronze medal.
County Farm, Clinton County, apples.....	Bronze medal.
C. W. Cummings & Co., Indianapolis, apples.....	Bronze medal.
Deolen Dougherty, Cambridge City, apples.....	Bronze medal.
Ed Eaton, Lagrange, apples.....	Bronze medal.
Mrs. Gertrude Eaton, Shipshewana, apples.....	Bronze medal.
L. E. Ferguson, White Pigeon, apples.....	Bronze medal.
Jos. Fields, Lagrange, apples.....	Bronze medal.
Marion Garnire, Lagrange, apples.....	Bronze medal.
Peter Gouzon, South Bend, pears.....	Bronze medal.
F. C. Grossman, Lagrange, apples.....	Bronze medal.
Miss Mary Grossman, Wolcottville, fruit.....	Bronze medal.
Chas. Haines, Richmond, apples.....	Bronze medal.
H. E. Hain, Granger, fruit.....	Bronze medal.
Oscar Hardman, Orleans, apples.....	Bronze medal.
A. T. Harmon, Orleans, crab apples.....	Bronze medal.
J. J. Hinshaw, Evansville, peaches.....	Bronze medal.
W. J. Hefner, Topeka, apples.....	Bronze medal.
John Hitz, Indianapolis, apples.....	Bronze medal.
Doc. Huser, Grandview, apples.....	Bronze medal.
W. G. Huston, Rome City, plums.....	Bronze medal.
J. C. Jeffreys, Grandview, apples.....	Bronze medal.
Mrs. Mollie Kaieger, Wolcottville, pears and plums.....	Bronze medal.
J. C. Kimmell, Kimmell, apples.....	Bronze medal.
Wm. Klinkner, South Bend, apples.....	Bronze medal.
Ben. J. Knaub, North Vernon, apples and pears.....	Bronze medal.
W. H. Lafuse, Liberty, apples.....	Bronze medal.
O. A. Lampman, Topeka, apples.....	Bronze medal.
La Launde Jardin Experiment Station, Clarks Hill, apples.....	Bronze medal.
G. A. Latta, Lagrange, apples.....	Bronze medal.
J. W. Low, Topeka, apples and plums.....	Bronze medal.
D. F. Maish, Frankfort, fruit.....	Bronze medal.
Sister M. Margaret, Rome City, apples.....	Bronze medal.
Chas. McGloran, Sunshine, fruit.....	Bronze medal.
Elijah McMahan, Richmond, apples.....	Bronze medal.
Melville Hiller, Corydon, apples.....	Bronze medal.
C. R. Mosby, Grandview, apples.....	Bronze medal.
E. L. Mounts, Owensville, pears.....	Bronze medal.
R. H. Neuman, Shipshewana, apples.....	Bronze medal.
S. R. Peters, Craig, apples.....	Bronze medal.
J. W. Philips, Princeton, apples.....	Bronze medal.
Frank Potter, Valley City, apples and pears.....	Bronze medal.
Purdue University, Lafayette, apples.....	Bronze medal.
W. B. Robinson, Vincennes, apples.....	Bronze medal.

G. T. Robinson, Greenwood, apples.....	Bronze medal.
Samuel Rowe, Lagrange, apples	Bronze medal.
Chas. Roger, Valentine, pears.....	Bronze medal.
G. M. Roy, Wolcottville, pears and apples.....	Bronze medal.
D. B. Schaffer, Lima, apples.....	Bronze medal.
A. W. Shoemaker, Daleville, fruit.....	Bronze medal.
Elmer Snyder, Lagrange, apples.....	Bronze medal.
E. H. Spencer, Mt. Vernon, pears.....	Bronze medal.
T. L. Stevenson, Wolcottville, apples.....	Bronze medal.
J. A. Stevens, Liberty, apples.....	Bronze medal.
Stokes & Thomas, Sunshine, fruit.....	Bronze medal.
D. L. Sowers, Rome City, apples.....	Bronze medal.
R. L. Thompson, Topeka, apples.....	Bronze medal.
Jas. Troop, Lafayette, apples.....	Bronze medal.
Elmer G. Tufts, Aurora, fruit.....	Bronze medal.
A. J. Turley, Orleans, apples.....	Bronze medal.
J. W. Turton, Grandview, apples.....	Bronze medal.
H. W. Vannice, Danville, apples.....	Bronze medal.
H. Wehry, North Vernon, apples and plums.....	Bronze medal.
Isaac Whiteley & Son, Cambridge City, apples.....	Bronze medal.
G. T. Wright, Orleans, apples.....	Bronze medal.
H. A. Yeager, Princeton, apples and pears.....	Bronze medal.
Ralph Zion, Clarks Hill, pears.....	Bronze medal.
Ruby Zion, Clarks Hill, apples.....	Bronze medal.

REPORT

OF THE

District Horticultural Institute

Held under the Auspices of Purdue School of Agriculture,
in the Christian Church, Kendallville, Tuesday
and Wednesday, August 30-31, 1904.

TUESDAY MORNING SESSION.

President Latta called the meeting to order.

Invocation by Rev. C. H. Bass, Pastor of the Christian Church of Kendallville, Ind.

Rev. H. C. Bass: Our dear heavenly Father, we thank thee that it is meet and proper at all times for us to call upon thy name, and especially at this time we feel that we may call upon thee and ask thy blessings on this meeting. Thou hast promised to bless those who walk the way on this earth according to thy will, and especially hast thou promised to bless us by sending sunshine and rain, and thou hast promised us a seed time, and a harvest, and we pray for these blessings as we meet here together today. Bless those who labor and earn their bread by the sweat of their brow, and so fulfill the physical law of their being in the world, and so shall our cups be filled and we be strengthened and thy name glorified. Bless those who shall speak in this assembly during the coming days; lead us unto a higher, more spiritual, and more fruitful way of life, and at last bring us to thyself, and thine shall be the glory forever. Amen.

President Latta: We will now be favored by a greeting by J. S. Conlogue, of Kendallville.

J. S. Conlogue: Mr. Chairman, Ladies and Gentlemen—I am very glad this morning that Rev. Dickinson is out of town, as it falls upon me to deliver the address of welcome, and you all know I can do it very gracefully. I am also very glad to know that I only had a moment's notice, for that too will in a measure excuse me if my address is somewhat informal. I am very glad that this Association saw fit to come to

our beautiful little city to honor us with their presence. We have very good talent here, and we hope that this will be one of the best meetings ever held in the State. We have been saying this for some time. We haven't many here at this morning session, but there will be more later on. We have been telling the people for some time what a meeting we were going to have, and I am sure that the people who do not attend will miss a great deal. Without discussing the matter further, I will say that the city feels highly honored on account of this Institute being held here. We are glad you came and hope you will stay a long time, and when you go away we hope you will say good things about us whether you think them or not.

President Latta: I see I am on the program for a response. I will give this response, then I will turn the meeting over to you. This greeting was short and sweet. I will try to make mine as short; as to the sweetness I will not speak. I really want to say at the opening that meetings of this kind are for two or three different purposes. One of course is to get information along particular lines. Another is to get the broader views that will come from a meeting of this kind. The individual who lives within the plane of his own observation lives in a very narrow plane. We must enlarge our range, and enlarge our knowledge by calling upon one another in these meetings. They afford just this kind of an opportunity. Again, these meetings serve to insure us most earnest effort and most successful work. I trust that we will realize all of these things in this meeting. They will give us practical, helpful information, enlarge our views of life, and our relations to life in several lines of work, and we will go out stronger in the work we have to do. These are the prime ends. Of course we will form pleasant acquaintances during these two days, which we trust will last through life. We will be better for meeting here, and that will be one of the good things—to develop and foster the spirit of fellowship. As a class, I think it may be said that farmers do not get together enough. They are isolated. At the present time they do not get in close touch with each other like business men do. I have thought that if we were more chummy it would be better for us. I hope that this spirit will crop out here in these meetings, and will be the inviting feature of this meeting. We must be social, friendly, helpful; come with the purpose of getting and giving, one as well as the other. We want to make our contribution. We do not want to be sponges, but accomplish our part. I said to a very bright young fellow once who did not wish to join our club, but rather sponge, that it was not a good thing to be a sponge, and always be absorbing things, for he would find that he would have to be squeezed. Now that is one good thing; that under pressure a sponge will give out something, and the one that has nothing fails to give out anything. So there must be that response on your part of active thought. And so I feel that we should enliven our meeting by questions.

objections, suggestions, or any way that will be helpful. I am forgetting myself. We were to have a short time to devote to the exercises for the morning. We have two strong fellows on the program this morning. The Possibilities of Fruit Culture in Northern Indiana. I think our people realize what these possibilities are. I hope we will give our views on this subject—such views as will strengthen our belief in the position of fruit culture in Northern Indiana. We have men who realize this responsibility. We will take the rest of the morning for the discussion of these two topics. It is my pleasure to introduce to you Mr. H. H. Swaim, of South Bend, who will speak on this subject.

H. H. Swaim: Benjamin Franklin said that he could tell all he knew on any subject in five minutes, and I think perhaps it is particularly fortunate for me that the time is short. I do not pretend to be able to compete with Franklin in knowledge, and I assure you it will not take very long to tell all I know on the subject of Fruit Possibilities in Northern Indiana. When we speak of possibilities a wide field opens before us. In this day of progress and invention, we dare not call the wildest dreams of man impossible. In the mechanical world we have many inventions and appliances in everyday use that fifty years ago were unthought of, or if suggested, were considered wholly visionary. In Horticulture many of our delicious fruits and beautiful flowers are the product of the last half century. Man has brought the apple to its present high standard of excellence from the sour wild crab; our juicy, luscious pears had their origin in the puckery seedling. Men yet living can trace each step in the development of the strawberry. We have learned now to control insect pests and plant diseases, and each recurring season brings new fruits and improved methods; so that when we speak of the possibilities we open a wide field for the imagination. But rather than indulge in any flights of fancy, let us take a look at the conditions and prospects which confront us as fruit growers of Northern Indiana.

SOIL AND ELEVATION.

We have an elevation of from seven hundred to one thousand feet above sea level, which precludes all danger from floods. The land is sufficiently rolling to give good air drainage and in some portions is quite broken and hilly, sometimes rising abruptly to a height of one hundred and fifty feet or more above the surrounding country. The land formation is what geologists call drift, that is, soil that was carried and deposited here by the advance of the ice fields during the glacial period. As a result of this formation we have a great variation in the soils, ranging all the way from the muck of the marshes and lowlands to heavy clay loam. It is not uncommon to find muck lands, sand and gravel loam and heavy clay loam upon the same farm. This makes it possible to grow

a great variety of fruits and give each a soil to which it is adapted and have all under your personal supervision. This combining a variety of soils, with suitable locations and elevations, makes Northern Indiana an ideal locality for all fruits which can be grown in this latitude.

Now in regard to the apple. This is the natural home of the apple. Northern Indiana apples combine as many good points as those of any other section of the Union, and can be grown successfully over the entire region, except perhaps the prairie lands of the extreme western portion. While this is true, it is also a fact that only a small per cent. of the land suitable for apple growing is being utilized for that purpose, and our cities are compelled to buy hundreds of car loads of apples annually from the fruit growers of other states, while our farmers continue to grow wheat at a loss upon land much better adapted to growing fruit.

There are, however, a few wide-awake, energetic men who are turning their attention to fruit growing, and their number is increasing each year. Fruit farms of from ten to eighty acres are not unusual, and their success is inducing others to make the venture. I called upon a young man of about twenty-five a short time ago, who has a fine young orchard of fifteen acres just coming into bearing, every tree of which he assured me he propagated and grew himself—a record which but few men of his age can show, and one of which he may well be proud.

Pears succeed equally as well as apples in this region, and are equally profitable. I have the care of a pear orchard that was planted forty years ago, which is still yielding profitable crops of fruit. Another orchard planted eleven years ago is now carrying its seventh crop of fruit, not having missed a crop in seven years. Last year when pears came the nearest being a failure they have for many years, this orchard bore a full crop, some of the trees yielding seven and one-half bushels of first-class fruit, which sold in my local market at one dollar and a quarter per bushel, wholesale. In fact all the tree fruits attain their highest perfection here and, with the possible exception of peaches, can be profitably grown. Do not understand me that peaches cannot be grown here, for we do grow fine ones, but climatic conditions are such as to make them too uncertain to be valuable as a commercial crop.

The grape is another fruit to which our hills are naturally adapted, and there are thousands of acres of hill-land which could be profitably planted to this delicious and health-giving fruit. It yields abundantly, seven tons per acre having been shown in my home county, St. Joseph, and clusters weighing two pounds each have been produced.

Berries and all small fruits succeed equally as well as the tree fruits, and can be grown in great variety and of a quality that is unsurpassed.

We have in the cities of Northern Indiana excellent markets for fruit, each year more and more people learning the value of a fruit diet, thus increasing the demand which we are not able to supply. The network of railroads which cover this region gives us the best of shipping facilities and access to all the large cities of the country.

The advent of the system of preserving fruit by cold storage is a boon to the fruit grower. By its use we can avoid the danger of glutted markets at harvest time and by distributing sales through a longer season can obtain better average prices. This alone opens up great possibilities for the fruit grower of the future, and its use is fast becoming a necessity in all fruit-growing centers.

While our fruit growers have accomplished much in the way of the production of fine fruits and generous yields, we are still far from the limit. There is an abundance of room for improvement. By better methods of culture we may increase the yield and quality of our fruit. Experimenters by crossing and by hybridizing are constantly giving us new varieties. These do not always prove superior to those we already have, but are the means by which we may expect to finally reach our ideals, and much honor is due to those who are making this their life work. We are constantly learning better and more efficient methods of fighting the insect pests and controlling the diseases which affect our trees and plants, so we may confidently expect the future to bring forth greater results than anything that has been accomplished in the past.

The one thing most needful to reach our ideal and place Northern Indiana where it belongs among the foremost fruit-producing sections of this country is more of the right kind of men. Young men of pluck and energy who have been educated for this line of work can find here an inviting and hospitable field for their labors, and by their example bring others to a realization of the grand opportunities which lie at their door.

Prof. Latta: Owing to the lateness of the hour we will omit the discussion at this point. Is this satisfactory? We would like to give Mr. Van Deman more time for the discussion of this important talk. Mr. Van Deman, a veteran fruit-grower of New York, will discuss before you how these possibilities discussed by Mr. Swain may be realized, as it is not your desire to postpone this discussion until afternoon.

H. E. Van Deman, Apulia, New York: Mr. Chairman, Ladies and Gentlemen—I have been stopping in New York for a short time. My home is now in Washington, but I feel at home all over the country. I was born and reared in your neighboring state of Ohio, and conditions that we meet here are very familiar to me, and have been from childhood. I have always been very much pleased in my travels with the condition of things in Northern Indiana and the northern part of Ohio. I know that nature has done a great deal for that part of the country. Your soil is low, is rich, etc., and while you have a climate that is somewhat rigorous at times, as has been suggested by the man who has just spoken, still the climate is not so rigorous but that almost all orchard fruits, small fruits and grapes may be grown with great success right here and all over this part of the State, and neighboring states. You hear folks say,

"Yes, but it takes a lot of hard work, backed up by good sense to get good fruit." This is true, but the possibilities that nature has offered you will be of no avail whatever unless the fruits are planted and then taken care of. The whole thing is bound up in the statement that you must plant and then take care of the fruit. Now this brings the responsibility direct to you, for nature has done her part. Now, then, will we do our part? If we are to realize the possibilities that nature has offered us we must do our part. There are not many in this room, but I wonder how many of the few that are in this room have all the fruit that they can use from the time that berries begin to ripen until the last winter apples are gone. I wonder how many have taken steps to provide themselves and their families with an abundance of good fruit the year through. We can do it. Will we do it? Do we do it? I am sorry to say that I don't believe that all here do it. I will leave this question with you and you can answer it each one for himself or herself. But I have never found a neighborhood yet where the people have half provided themselves with the fruits that they might have had and could have used, and if I should ask the question "Why?" I don't believe anybody could tell. Perhaps it is not laziness, but perhaps that has something to do with it, but it is a sort of inattention to business, inattention to our duty that we owe to ourselves and to each other, and if I should leave any impression upon this audience it would be this fact. I wish you would carry this out. Begin next spring, if you don't begin sooner, to have all kinds of fruit. It will pay you in dollars and cents. We may love hog and hominy, but you could live a great deal better if you will have an abundance of fruit for your diet. What is nicer when springtime comes than an abundance of good strawberries, and there is not a piece of land in all this country that will not raise good berries. Wherever you can grow corn you can grow strawberries. You can grow all kinds of berries—blackberries, raspberries, and all the catalogue of berries that are cultivated by the nurseryman, and there is no good reasonable excuse why anyone of you, even though you live on a town lot, may not have a little piece of ground on which you can plant fruit. We have quite a strawberry patch in our back yard, and when we lived on the farm we had all we could use, and we now feel the privation. There is a great satisfaction in eating fruit that you have grown yourself. There are lots of things money will not buy. It cannot buy the privilege to go out and pick berries. I want to be right up to date. Even when you live in town lots you can have a small garden at your command. Now it is surprising how much can be grown on a small space of ground. Even on a space no larger than this room we might grow half as many strawberries as a family would use, a few grapes, and have a few apple trees or pear trees. This could be done in a space not larger than this room. And haven't every one of you that much or more space to spare? How many farmers are there that never sit down to home-grown berries? Very likely there are some right here.

Some say it is cheaper to buy. Yes, but you don't buy them as a rule. This is only an excuse when you say that it is cheaper to buy than to raise them. It is not true in the first place, and in the next you don't do it. If you raise them at home you will have them, and as I said before, that is one of the points that I wish to impress upon each member. Make use of these possibilities by planting at once, and do not put it off until some more favorable opportunity, for that opportunity very rarely comes. It is like an opportunity in business. You will have to make the opportunity yourself. If you don't do it no one else will make the opportunity for you, and it will not be done.

Now, as to orchard fruits. A great many people make a mistake when they choose the trees for their orchards. In the first place I may say that every farmer should have what would be properly called a family orchard. A commercial orchard is all right, but above all, have a family orchard. A family orchard is an orchard which will produce different varieties of fruit, from the earliest to the latest, without a gap in time, or a time when there will be no fruit at all. Now this is where skill and knowledge comes in. You should have a knowledge of when certain fruits will ripen, whether or not they will be a success in your particular locality, etc. Now we have a good guide in the nurserymen's catalogue, for I want to say to you that nurserymen are about the most philanthropic and most useful people in the whole country. They are doing a world of good wherever they live, and they are doing the country, as a whole, good. They give advice as to what, when and how to plant and take care of fruit. Some of these catalogues are really excellent books on fruit growing, and they will tell you, if you do not know by experience, how to do things. If you will pay more attention to what is said in these little catalogues you will learn a great deal and be very much profited. There are books and pamphlets on fruits laid right before our eyes, and yet we are so blind we pay no attention and make a kind of a guess. I have known apple orchards planted out—and I'll venture there are some here—where there were five or six or ten Red Astrachans, and a Maiden Blush, and then there will be a skip of about two or three weeks when there won't be any apples at all. And the next thing is a winter apple that will ripen about Christmas. Now the intelligent way to begin is to begin with the earliest, say for instance the Yellow Transparent, of which have one or two trees, or the Summer Rose, which is another very early apple. And three or four trees of the Red Astrachan. That would be an extreme number. It would be more probably than you would use. But why not have sense and wit enough to plant more than you can use yourself. A little later plant those like the Lowell, Jefferson and Hawley and Maiden's Blush, if you like it. I don't, because I think we have better varieties. I would be willing to throw away every variety we have if we could get something better. Let's get the best there is, and if we have the best there is there is nothing more to do for the men, women and children who

grow them. The man who tills the soil should live on the cream of the earth, and he may if he will. Take the possibilities and work out how you can do. The man who tills the soil should be the best fed man on earth. When people in the city buy things they do not know where they came from. A fish caught out of the water and put in the frying pan is lots better than one that has been salted down. You meet the greatest privation when you go to the city. I have experienced it and my wife talks about it constantly. You get things from market that ought to be fresh out of the ground or cut off the trees or bushes, but they are not always so.

If there is a will there is a way. The way is open for every man, woman and child to be successful in the raising of fruit. There is no excuse. Some of the neighbors like sweet apples. They have Sweet Junes planted. A little later Golden Sweet, which will be ripening this month and on into September is good. A little later you will have the Randel, a sweet apple of the highest character.

The peach is not so well adapted to this region. There are some localities where it does very well, but generally it is a failure in Northern Indiana, compared with the peach-growing parts of the country, such as the peach regions in Michigan, Georgia, Texas, Maryland, Connecticut, and other like regions where they grow by the thousands of acres. Of course you can have a few at home.

This is a good region for cherries and plums. You may have a number of varieties of these and there is no excuse for not having them. The quince can also be grown here.

We might leave the orchard fruits now and go on to the grapes and see what a large list of fine grapes we have. We have many different varieties.

I am proud to tell you that my great grandfather was one of the foremost fruit growers of his time. They came from Pennsylvania in the latter part of the century, about 1796. He grafted seedlings apple trees, and he had to take all kinds of chances as to what kind of a variety they would produce. We do not have to contend with such things as that now. We have lists so long that they are cumbersome. We have so many in size, color, form, flavor, that we can choose to suit anybody and everybody. It is simply wonderful even in this immediate locality what one can do, and that is the question that most concerns you right here. And that is "What can we do right here?" That is what we want to think about and what we want to work out. I presume that this will come up at other times of this discussion, and perhaps those present may have something to say then. I will say for your encouragement that fruit growing is the most estimable occupation in the world. It is the poetry of agriculture. Northern Indiana is an excellent fruit region and you ought to make use of these great possibilities, and I hope you will not forget them.

Prof. Latta: We still have some time for questions. Is it practical for the farmer who grows fruits for family use—for the use of his family only—to employ methods that will insure high class fruit free from blights, or is that only practical with the commercial fruit grower?

Mr. Van Deman: I say that it is. Anything that is worth doing at all is worth doing right, and there is no use leaving all methods of fruit culture to the commercial grower. He can have the appliances and use them just as cheaply in proportion as the commercial man can. Certainly he can, just as easy as a man can use a big machine to spray a hundred acres.

Prof. Latta: Is that important?

Mr. Van Deman: Yes, it is certainly. The person who does not make use of the modern methods of fruit culture might just as well quit, or he had better never begin. If he sits down and folds his hands idly the worms will spoil his fruit. It is entirely practical to use the modern spraying apparatus if you are spraying for the family, and one can do it just as intelligently as the man who does it for the dollars and cents that are in it. I say "yes."

Prof. F. Roth, Ann Arbor, Michigan: We have been talking mostly about the commercial side of the market. Now two-thirds of the people of the United States are farmers, and I have wondered why they don't do something for themselves. Why shouldn't we provide for the feeding of the two-thirds (the farmers) and let the other one-third take care of themselves? Here is a question I would like to ask. Isn't it possible to select such fruit, and to carry on fruit culture in such a simple way that even the farmer with very small means, and with a small amount of intelligence can get along and still do considerably better than he is doing at the present time?

Mr. Van Deman: He certainly could. He can economize in time by a little thought. A simple idea followed out will save much time and worry, and that is to plant all of your vegetables and fruit plants in straight, long rows so that they can be cultivated by a horse. If you do not have enough of one kind to make a row, plant several different kinds in a row. This hoe gardening is a nuisance. Plant your things in straight rows and cultivate them with a horse. Plow your strawberries the same as anything else. Plant your garden the same as a cornfield, and attend it with a plow and double cultivator.

Mr. DeVilbiss: I have one question that I would like to ask. A farmer has much leisure time in the winter, but not much time in the summer. I have had experience in the last two or three years, and it seems to me that the time is not far distant when we should spray more

in the winter and kill the spores in our orchards, and save the fruit from scabbing in the summer time. I believe the black rot can be killed by spraying in the winter time. I believe that the pores of the fungus that causes scab which appears on the apple can be to a great degree fought in the winter time. Is this not true?

Mr. Van Deman: Well, I suppose that question is directed to me. I will say, Mr. Chairman, that I do not profess to be an expert on fungous diseases. We have a gentleman from Michigan who can better answer that. There is a great deal that can be done to kill spores. When you kill the spores you cut off a large part of the trouble by nipping it in the bud.

Prof. Latta: I suppose this will come up in tomorrow's program. It is one of the conditions of success. That is sufficient for this time. Are there any more questions?

Prof. W. P. Hedrick: In talking with other people and with older people they almost invariably tell us that if conditions were as they used to be they would be glad to plant fruit trees, but now conditions have changed, and that it doesn't pay as it used to. I feel sure that some in this audience may feel the same way. I should like to have Mr. Van Deman to answer this question. Have conditions changed and how can we meet the changed conditions?

Mr. DeVilbiss: I do not think that conditions have changed. It seems to me that we can grow better fruit than we ever could. Too many are like the man that says he hasn't time to plant strawberries. He has the time but he won't do it. He ought to do it. When a man says he hasn't time he tells what is not true. There was a man came to my house one day while I was planting out my strawberry patch. This man never raised any strawberries, and I don't believe he ever bought any. He talked and talked away to me, and finally I asked him why he didn't raise a patch of his own, and he replied that he didn't have time to plant any. I in a jokingly sort of way told him that wasn't true for he had talked to me long enough to have a patch of berries planted, and had bothered me in the bargain. He admitted that he believed that was true, and started off home to plant a patch. We must urge it on these people.

Rev. W. H. Talbert, Albion, Ind.: I dislike very much to differ with these people here who have had so much experience, but I fear I will have to. It has been about sixty-two years since I was a boy. I go back to my father's home to the old trees that were bending with fruit, and realize that many conditions have changed since then. There were then no such things as these pests that destroy the fruit now. I can not remember of any such a thing. Our apples were perfect. I used to take an apple or two with me and keep them under the covers and eat them

after I had gone to bed. We had the finest kind of fruit. We didn't have the worms and scabs. And to my mind conditions have changed, but I believe that the man with energy and brains, not very many, not necessarily an expert, can grow fine fruit, but it will take more effort and more energy than it did fifty years ago.

Prof. Hedrick: I think conditions have changed to a certain extent. I think it is harder to grow fruit, and I only asked the question hoping that Mr. Van Deman would answer it, and would state that it requires more effort and more skill and harder work to grow fruit now than it formerly did. We must meet the new conditions that have come to the fruit grower within the last quarter of a century.

Mr. Fields: My observation in the West—in the State of Washington—is this. We have some very fine fruit there, but this same question came up there with those fruit growers, and they made it a strong point that they had to fight a harder battle to raise fruit now than formerly. I simply make this remark.

Mr. Van Deman: I think it is perfectly clear that conditions have changed in some ways. Of course the sun shines just the same as it used to; the wind blows, and it rains and we have sudden changes in the weather. Yes, we have different conditions from what we had even since I can remember. We have more fungous diseases to fight, and we have to fight them harder, but we can raise just as good fruit as our grandfathers did.

Mrs. Virginia C. Meredith: Aren't all these disadvantages more than set off by the different varieties and the appliances we have?

Mr. Van Deman: Yes, we can handle the fruit business much better if we will. That is all we lack—the will.

Prof. Latta: We will now close the discussion for the time. This afternoon the subject of forestry will be the one for discussion. The speakers are all here and are in the room. We are glad to announce this fact, and we want to begin on time. We did not begin on time this morning, and I fear we set a bad example. We are to meet at 1:30. If possible we will have some music. If not, we will proceed without it. Invite your friends to come this afternoon.

We will now stand adjourned until 1:30 this afternoon.

AFTERNOON SESSION.

Tuesday, August 30, 1904, 1:30 p. m.

Prof. Latta: We are all pleased to see so many faces this afternoon. This will make a nice nucleus for a healthy social gathering. If those who are in the rear of the room do not hear readily, I would advise you to come to the front at the outset so that you may not disturb the speaker, and so that you may also give room to those who come in later. Our theme is forest preservation and reforestation. I am not a forester. We will now have a talk by Mr. Weigle, who is employed by the National Department of Forestry. He will give us some account of the work of the National Bureau of Forestry. I want him to feel that he has the right of way to tell what he thinks the people would care most to hear about.

Mr. Weigle: Mr. Chairman, Ladies and Gentlemen—I am sorry for you people this afternoon. This program called for our honored Chief of the Department, instead of that, a very inferior article is to take his place, and so I hope you will not charge up anything against me, but charge it to Prof. Latta.

Prof. Latta: We are very glad to have this department represented here. Very glad indeed.

Mr. Weigle: The topic in the program calls for something on the work of the National Bureau of Forestry. That you may understand better whether the Bureau of Forestry is progressing or not, it may be well to give just a bit of its history.

Through the agitations of an association of scientists, Congress was memorialized to take some measures toward the preservation of our forests. In 1876 an appropriation of \$2,000 was set apart for the employment of some person qualified in the natural sciences to look into the condition and amount of available timber in the United States. This appropriation was made continuous and in 1881 raised to \$5,000 and a Division of Forestry created. In 1886 Dr. B. E. Fernon, a trained forester, was appointed chief, and scientific investigations were at once begun. In 1896 Dr. Fernon resigned to become director of the Cornell University Forest School, and Mr. Gifford Pinchot, the present efficient chief of the Bureau, was appointed. The work has grown so rapidly that it became necessary to have a reorganization to facilitate its business. This need was recognized and in 1901 out of the Division a Bureau of Forestry was created. The needs of the work were constantly recognized by increased appropriations from the \$2,000 in 1876 to nearly half a million at present.

Owing to the lack of trained men there was comparatively little field work done prior to 1900. At present this want is being supplied by the trained men from the several forest schools.

After the Division of Forestry took the rank of a Bureau it was re-organized and divided into "divisions," each division having an executive head known as "Chief."

The present organization calls for a division of:

1. Forest measurements.
2. Dendrology.
3. Forest management.
4. Forest extension.
5. Forest products.
6. Records.

The executive heads at present are:

Chief of Bureau and Forester—Gifford Pinchot.
Division of Measurements—Overton U. Price.
Division of Dendrology—Geo. B. Sudworth.
Division of Management—Thomas H. Sherrard.
Division of Extension—William L. Hall.
Division of Products—Herman Von Schrenk.
Division of Records—James B. Adams.

The Bureau of Forestry aims to perpetuate the forests of the United States for their utility. This utility may be in the capacity of protection, water conservation or lumber; either of which involves a problem that is far more interwoven into the social fabric of the country than the casual observer is aware.

Now, then, as to the problems to be solved by the several divisions I see no better way to inform you of the work of the Bureau than to tell you what is being done at the present time, as largely what is being done now is a repetition of what has been done and of what shall be done; of course, new problems will arise, and some have possibly been settled that shall never again arise.

The work of the Chief of the Bureau is of a general character, mostly advisory. It is his business to see that the right kind of men are at the head of the several divisions. The needed legislation must be looked after by him, he spends much energy in having the lumbermen see that the Bureau is their friend and not their enemy; he has spent much time and energy in bringing about an amicable settlement of the grazing problem of the West; he has much to do with the co-operative work with the states; the connected problems of forestry and irrigation; tours of inspection, etc.

Division of Forest Measurements.—This has to do with lumbering; co-operative state work, and the various kinds of measurements that are taken in studying tree growth. The lumbering operations being carried on by the Bureau at present are on several of the forest reserves and on an Indian Reservation in Northern Minnesota. This reservation is to become a national forest reserve after it is lumbered. The work is con-

ducted so as to cut the trees above a certain diameter only, and to leave a certain number of seed trees, principally white pine, to seed up the tract.

This lumbering differs from the usual way of lumbering, in that great care is taken to leave the tract, after the merchantable timber is removed, in a condition whereby another crop is assured. Instead of the usual burning of the slash and the destroying of all the young trees left on the ground, measures of protection from fire will be installed. The tops will be lopped so they will decay quickly.

Co-operative work is at present being carried on with Wisconsin, Maine and California. Season of 1903, with California and New Hampshire. In this co-operative work with states the state makes an appropriation to be used in forest investigation in co-operation with the National Bureau which is willing to spend a similar sum in the investigation.

California appropriated \$15,000. This will go largely toward defraying the expenses of the men in the field. The salaries of these men are borne by the Bureau of Forestry.

The work in California was begun in 1903 and will possibly be completed in 1904. The work consists largely of making a type map which will show the distribution of the several species; the approximate number of thousands of board feet per acre; the burned areas; the lumbered areas; timber line on the mountain, and possibly some other things of which I at present do not think.

A critical study is being made of the reproduction of the several species, which species is being most lumbered, and why, objections to so-called inferior species, location of sawmills, capacity, when they sell their product, manner of lumbering, amount and character of waste left in the woods, wages paid, sanitary condition in camps, character of men employed, etc., a study of fire and grazing problems, and effect upon streams in lumbered areas, a study of the rate of growth and measurements of the heights and diameter of the several species on the different soils and locations, and many other problems of less importance.

Division of Dendrology.—By dendrology is meant tree botany. The work at present under this division is a study of the Tanbark Oak on the Pacific Coast; study of the Four Leaf, Torrey and Bishop pines in California. A study of the native exotic acacias of California and a study of the big thicket country of Texas. This division also has charge of the study of the improved methods of turpentine orcharding and of the exhibit of the Bureau of Forestry at the St. Louis Exposition. The old system of turpentineing was to cut a deep pocket near the base of the tree and allow the pitch to drain into this from a scarified surface above. There are many evils about this system. Much of the pitch instead of going into the cut pocket would miss it and flow down to the ground. This was not only a waste but a great feeder for the annual

fires that run through the southern pineries. These pockets weakened the trees in themselves and often being further weakened by fire many thousands of them were broken off by the wind. The new system does away with the pocket and instead uses an earthen cup into which the pitch is drained. The pitch is drained from the scarified surface of the trees by means of two strips of tin stuck in this surface, slanting toward each other, one being a little lower than the other. The pitch drains from the lower into the cup. The lessened surface of the pitch exposed to the air increases its value at least 25 per cent. and as more is caught by the new method with less injury to the tree, many turpentine orchardists of the South have already taken hold of it, in fact so many that the few factories were unable to supply the demand for cups.

The exhibit at the St. Louis Exposition is in charge of Mr. Gaskill. In this exhibition a collection of pictures lining the walls of a long narrow room fully represent the character of the forests in all parts of the United States. A large map of the United States made of putty and paint shows the forest regions in color, and by means of colored pins shows the location of the National Forest reserves, forest schools, and places and kind of work that has been done in the United States by the Bureau of Forestry. Piles of railroad ties treated to creosote show some of the work of the Division of Forest Products. Samples of piles are shown that were in use in southern bays not more than six months which were thoroughly honeycombed, while samples of others that had been first creosoted and then put in the same place were perfectly sound after five years' service. Outside the building you will find logs of Cedar, Red Wood, Bull Pine, Oak, Sycamore, Poplar, etc., of immense size. Many of the States, the Philippine Islands and Canada also have most excellent exhibits of those forest products. Don't fail to visit these exhibits if you attend the Exposition, as you will surely be much interested.

Division of Management.—This division is responsible for the making of the working plans, commercial tree studies and woodlot examinations. At present the Bureau is making working plans for—

1. Emmet O'Neal, Northern Alabama.
2. Northern Pacific R. R. Co., Idaho.
3. Hillman Land and Iron Company, Western Kentucky.
4. Ansel Dickinson Estate, New Hampshire.
5. New York & Texas Land and Cattle Co., Western Texas.
6. Weyerhauser Timber Company, Washington.
7. United States Coal and Oil Company, West Virginia.

Most of these represent large areas. The Weyerhauser Timber Company of Washington, have more than twelve hundred thousand acres, part of which contains some of the finest timber in the world.

Now it may be interesting to you to know just what is done in making a working plan. In the first place the owner must express a desire to have a plan of management laid down for his forest. This he usually does by writing to the Bureau. The Bureau then sends a trained man to examine the tract who writes up a report stating in some detail what conditions he finds there and whether or not he thinks it would pay the man to go to sufficient expense to have a working plan made for the tract. This report is made entirely at the expense of the Bureau. If this report shows that a working plan should be made an agreement is then entered into between the owner and the Bureau to the effect that the Bureau will pay the salaries and the owner shall pay the expenses of the men while making the working plan. The working plan after it is finished usually includes—

1. Maps showing the boundaries of the tract, ridges, rivers, ponds, roads, types of timber, contour lines if hilly, cut-over land, burned land, waste land, and anything else of a kindred nature that the individual tract would suggest.
2. A description of the forest by division, natural or artificial.
3. Tables of yield based on the study of the growth of the different trees under conditions now prevailing on the tract, showing how much timber can be cut now, and at different periods in the future.
4. An estimate of the merchantable timber.
5. Methods and cost of lumbering.
6. A study of the reproduction of the forest species, and a plan for cutting the mature trees with least injury to the young growth.
7. A plan for the protection of the forest against fire.
8. If the forest is too dense, the plan will include instructions for thinning. If too thin, a plan for increasing its density.
9. If the tract has large areas to be planted, it will include directions for making and caring for a nursery and the selection of species most suitable for the location.
10. A plan for the management of the tract.

In making a commercial tree study there are four conditions included:

1. Commercial considerations.
2. Biological.
3. Silvicultural.
4. Exploitation.

The first or commercial consideration is the one to which most attention is given, and some of the things included in this study are:

- A. The area of commercial distribution of the given species in the various states.
- B. Average stand per acre in the different localities of the occurrence of the species.

(These two studies furnish a basis for a map showing the commercial distribution of the species and illustrate by colors the variations in the stand in different localities.)

- C. An estimate of the total stand of the species.
- D. The different commercial uses for which the tree is employed.
- E. Present stumpage prices.
- F. Change in the stumpage prices in the last few years showing the tendency of the prices.
- G. Size taken on the stump and in the top according to the uses for which the timber is cut.
- H. To what profitable use could the timber be put which is left in the woods.
- I. The drawbacks of the present system of lumbering and its effect upon the renewal of the species.
- J. Condition indispensable for the successful renewal of the species.
- K. Time required for the trees remaining after lumbering to attain merchantable size.
- L. Value of land occupied by the given species, and
- M. Taxes paid on the cut-over land; on the timbered land, and many other things.

The Bureau is now making a commercial tree study of the hardwood of the southern Appalachian Mountains, of the Sugar, Western, Yellow and Lodge Pole pines in California, Montana, South Dakota, and Wyoming.

Division of Reserve Boundaries.—This division of section, has to do with looking up the exact boundaries of the reserves, locating new reserves and making releases of some of the land now included within reserves. This work is being carried on in all the Rocky Mountain and Coast States, also in Alaska and Hawaii.

Division of Forest Products.—This division has to do with making investigation along the line of seasoning, testing and preserving forest products. This investigation in the seasoning of timber is for the purpose of finding out the methods of piling lumber, whereby it can be dried out most quickly with the least amount of checking and warping and its increased durability over unseasoned timbers in contact with the soil.

Also in the case of railroad ties. The loss of weight is quite a factor in the cost of transportation. While the tie is seasoning the money invested in it lies idle and interest is lost, but the difference between the cost of transporting a seasoned and an unseasoned tie pays the interest on the idle money many times over.

By testing is meant the finding out of how many pounds' strain a piece of timber will hold without breaking or crushing. This information is most useful to mechanical engineers.

By preserving is meant the soaking or forcing into the lumina and fibres of the cells a poisonous chemical that will not easily leach out. Creosote is the best known. Since all decay is caused by the presence of bacteria or fungi, if the wood is saturated with poison there is no chance for a fungous attack; therefore no decay.

Seasoning and preserving experiments are most adaptable to railroad ties, telegraph and telephone poles, fence posts, shingles, paving block, and bridge timbers. These experiments are being carried on extensively at present in co-operation with the Northern Pacific, Southern Pacific, Santa Fe and New York Central Railroads, and the American Telephone Company. Testing is being done in co-operation with Yale University, Purdue University, University of California, and in the District of Columbia.

Division of Forest Extension.—This division has to do with investigations that lead to a knowledge of the species most suitable for planting on different soils and under different climatic conditions.

The time and how to gather, preserve, test, germinate and plant tree seeds, preparation of soil and how to grow and transplant seedlings are also treated under this head. Also the study of the silvicultural characteristics of the different species, especially their shade enduring qualities, power of reproduction, susceptibility to injury by frost, storm, heat, moisture, drought or insects, study of sand dunes and how to reforest them, making planting plans for woodlot and shelter belts; study of erosion and how to reclaim barren wastes that have been gulleyed by heavy rains; study of trees best suited for planting along the banks of rivers to hold the ground intact and prevent overflow.

Study of trees most suitable to reclaim the arid region of the Central West, and many other problems of less importance.

The work now in progress that is under the direction of the Division of Forest Extension is—

Work on a large government nursery on San Gabriel Forest Reserve, California; work on government nursery, Dismal River, Nebraska, and the planting of many thousands of pine on the reserve at the same place. These sand hills of Western Nebraska are too dry and barren for agriculture, but by an experiment made about fifteen years ago by what was then the Division of Forestry, it has been proven that the western yellow pine (*Pinus ponderosa*) grows very well; from this knowledge a reserve of two hundred thousand acres was set apart which is practically destitute of trees. A portion of this will be planted to pine each year.

Work is in progress on a government nursery on the Pike's Peak Forest Reserve. A planting plan is in making for Griffett Park, California.

Planting plans are being made in co-operation with farmers in Iowa and Nebraska. Study of Chaparral in Southern Sierras. Study of the results of forest planting in Illinois, Iowa, Nebraska and South Dakota; study of forest replacement in Nebraska, and study of reproduction preparatory to forest planting in Salt Lake Forest Reserve.

The planting of the Middle West so far has been largely of post timber, such as Catalpas, Locust and Mulberry, and we must expect this to continue among the farmers and railroads as it is from these only that quick returns can be received. The planting of forest trees in large areas will be done mostly by the States and Nation.

The leading citizens of the Rocky Mountain region and Coast States who but a few years ago set up a howl against the forest reserves have practically all learned the benefit they are going to be to the West in the way of lumber for her industries and water conservation for irrigation and are now praying for the areas to be increased and more efficient management.

WOODLOT PROBLEM.

Woodlots are not very large, yet the aggregate makes many millions of acres of timber. Hence, it was thought by the Bureau that whatever could be done to benefit the woodlots would be the most valuable kind of forestry.

Field work was at once begun in the New England States and New York, then Michigan, and next Ohio, where I am working at the present time. Our method of procedure is to select the names of several representative farmers in each county. These names are gotten from the Agricultural College Experiment Station, and Superintendents of Farmers' Institutes. A circular is sent to each of these farmers which offers a free examination of his woodlot, and a written report showing how its conditions may be made better. If he chooses to avail himself of the offer, he sends in an application to the person in charge. The agent of the Bureau then visits the woodlot and goes through it carefully with the owner and points out the evils that exist and explains how they may be remedied, if such is possible, after which a report is written, sent to Washington, where it is reviewed, and typewritten, and a copy placed on file, and one sent to the owner.

Some of the evils found in the woodlots are—

1. Pasturing of cattle and sheep.
2. Absence of leaves and young growth.
3. Presence of grass, and stiff sod sometimes.
4. Hard dry soil.
5. Drainage of fields about woodlot and lowering of the water level.
6. Trees full of branches down the trunk, and dead at the top. Stag headed.
7. Woodlot open all around so that the prevailing west and north-west winds may pass through uninterrupted.
8. Stand of timber composed of inferior species.
9. Stand of timber too dense or too open.
10. Inferior species overtopping the smaller species of value and shading them out.
11. Growth of hazel or briars too dense for tree seedlings to have a chance to grow.

The best condition for tree growth is realized when you get it just like it is in a large virgin forest, the ground covered with a layer of

humus that is changing into soil and a good mulch of leaves and seedlings all over the surface. Under these conditions the moisture is held and the ground remains fresh and loose.

Almost everything that is advised in bettering the condition of a woodlot aims at one of three things: (a) Density; (b) species in mixture, or (c) bringing the soil condition back to its virgin state.

I have briefly gone over the work of the Bureau at the present time. This is very characteristic of the work. There are large problems entered into between the State and National Bureau. They are of great worth and are doing great good in our state forestry work.

Now I will say a few words concerning the work I am doing myself in Ohio. I have been sent for to examine the woodlots of Ohio with reference to bettering their conditions.

Prof. Latta: Will you permit of questions being asked you at this time?

Mr. Weigle: I should be glad to answer any questions.

Prof. Latta: Would you advise thickening up a forest by actual planting or letting the forest reseed itself?

Mr. Weigle: In places I would let the forest reseed itself. Another way is to plant walnuts. If you will plant walnuts and keep the stock out they will grow, if not the stock will tramp them all down, and in a few years' time you will have the forest replenished. Just stick the walnuts in and leave them to themselves and in the spring they will start up, and you will soon have a very valuable tree.

Prof. Latta: Do you find the farmers quite ready to keep the stock out?

Mr. Weigle: I have found no objection to that. I say to them, which is more valuable, to turn your cattle in here, or to let the woodlot grow? Which is more valuable the increase you get in your cattle or the increase you get in the woodlot? Just see here. You have twenty acres of forest here, and one hundred and twenty-five sheep. Why not fence off a portion of this woodlot for them? The grass doesn't amount to anything at all. It doesn't contain very much nourishment. You will find good grass in the forests in some places, but not very often.

Mr. DeVilbiss: Are you ready to protect the locust against the borer?

Mr. Weigle: No, sir; only to cut down the tree and start a new growth. A number of people will not do that.

Mr. DeVilbiss: Would you advise against planting the locust?

Mr. Weigle: No, sir; it is very persistent and will grow anywhere. I was in Ohio where a man had quite a number of locust trees and he did not know that there was a borer in a single one of them, but there was. He planted seven thousand this spring and intends to plant ten thousand next spring for fence posts. The old trees are completely full of the borer, but they grew all right anyway. If you do not have the borer it is all the better.

A Delegate: What kind of soil did he plant them on?

Mr. Weigle: A clay soil. That clay soil may be different from the clay soil here, however. And it depends upon the kind of clay soil. I am not sufficiently up on soils to tell what kind of a clay soil it was, and whether it was the kind we have here. There was very little sand in it—all clay soil.

Mr. Swaim: Would the reforestation of land have anything to do with the rainfall? Would it increase or decrease it?

Mr. Weigle: Well possibly it might have a slight effect upon the rainfall, but according to our investigations I do not think it had much to do with the total amount of rainfall in the country. Forests keep the rain from being carried off of the ground in a very short time.

Mr. Swaim: Will you give in detail the method for treating timber with creosote for preserving it?

Mr. Weigle: I do not know that I can give you the method in detail. But we used to put the timber into a car and run the car into a large cylinder and then they would pour in the creosote, and put on a hydraulic pressure which would force the creosote into the fibers and cells of the timber, and that would kill all diseases. All decay comes from fungous diseases. When you stop this you have brought about the conditions that are necessary. An Italian invented this process. It was to force the creosote into the cells of the timber first. Fill up the cells with air then turn on the creosote and fill up the fibres. Of course some will force its way into the cells. When you take off the pressure the air will come out of the cavity of the cells. I do not know whether this will be practical or not.

Mr. Swaim: That process is particularly adapted for use in a large way?

Mr. Weigle: Yes, I hardly think it would be practical in a small way. Many lumber concerns are doing this with their timber, and you might pay them to have yours done likewise. This would be cheaper.

Prof. Latta: I think we will have to leave Prof. Weigle just now, and if your question hasn't been answered you will have to hold it for a while until we have general questions. Our sister State on the north has given attention to forestry and the forestry question in recent years, and it has made substantial progress. There are men there who are very much interested in this question, and we are very fortunate to have one here. Their southern boundary comes very near to us, and what they have done there will have close application to what we can do here. We will now hear from Prof. Roth, Forest Warden, Ann Arbor, Michigan.

Prof. Roth: Mr. Chairman, Ladies and Gentlemen—You all remember from boyhood and girlhood times when you had hard times accounting for yourselves in school, so you just talked around. Possibly you would tell some interesting story so as to get off the main point. I am booked to tell you about the reforestation in Michigan, but I can tell you all I know about it in a very few minutes, so it falls to my share to talk around. However, I shall try to make clear what we are driving at. It is almost necessary to know something of the conditions with which we were surrounded in order to appreciate the motives and efforts. The State of Michigan, just north of you, is a bigger state than yours, we think, in various ways. We have about thirty-six million acres of land, and it can all be divided nicely into halves which differ very greatly from each other. One-half of our state is really well settled farming country like what you have here in Indiana. In fact when you cross the line you would not know that you were going from Indiana to Michigan on account of the radical change. Well, as I have said, one-half of our land is very well settled. One-half is settled by farmers, and of that half at least sixty per cent. of the improved land is cleared and fenced. But the other half is very different. One-half of our state is in a distinctly unsettled condition, sparsely settled, with very little farming. Of that half there is not a county that has as much as thirty per cent. of land settled. Taking the land on a whole, there is scarcely five per cent.—five acres out of a hundred—that is improved land. You would not suppose it when you are coming to visit us where we have nice things and good things. You could hardly believe that we were so rich in real wild land. In this particular we differ radically from you here. We have in our state a large area of country on which we can raise not only all the timber that we need, but a great deal more. If we look at the forests and the forest lands of Michigan they divide themselves very nicely into three great groups. The first group is the farmers' woods. The farmers in this settled half of ours have about twenty-five per cent. of their land still in woods in some form or another. They have woodlots like yours which occupy the immense area of over four million acres. We have another body of land where forests are still growing; mostly forests of hard wood

which were in former times mixed with pine. I can not tell you how large that body of land really is because nobody has taken the dimensions of it.

We have three bodies of forest land, and the most important from our standpoint is the old pinery lands. This is most important to the State of Michigan. I will not lament about what has happened to all this, but I simply want to tell you that we had immense areas of pinery lands which are practically denuded of timber. Our woodlots are just like your woodlots. They are very thin, because the best has been cut out. They are not producing one-third or one-fourth of what they ought to. The farmers seem to think that they do not care what their ten acres are producing, except for firewood. This means a great deal to the State of Michigan when four million acres of its land is producing only one-fourth of what it should produce. Wood in our part of the country is wood. It is not so in Indiana. We value wood even for firewood, and it produced three dollars on the stump, and if the farmer only gets six bits' worth when he is losing the other part of the three dollars that he ought to get from his acre of land, can't you see what the state is losing? The farmers are losing three million dollars a year. This part, however, has been amply touched, so I shall not speak of it further.

The other part of the hardwood lands that I have referred to are the forests that have been culled by the lumbermen of bygone times for what pine there was in it. There are thousands of acres of just this kind of land. But you couldn't tell it if you were not an experienced woodman, for it requires an experienced woodman to tell it. You see elm, maple, and basswood, and other varieties of hardwood, very little oak. But by the way this is interesting. You see there a mixed forest of hardwoods, which trees are from eighty to one hundred feet in height, and the difference between the hardwood forests and what are known as the pinery lands is so conspicuous that you can follow almost the road in many places when walking from one land to another. These forests which form the second portion of the land today is being cut off by lumbermen at the present time. The lumbermen have refused to sell these lands. They have held them, knowing perfectly well that this timber would come into market and that they would make big money. Just the other day I visited a tract of land north of Rudyard with a man who bought it fifteen years ago who paid for it on the average of about three dollars an acre. He showed me a number of basswood trees that were worth at least four times as much as he paid for a whole acre. That gives an idea of what these men are doing, and they know perfectly well what they are doing, too. This land is all right. It will be just like the big hardwood body which composed our farm country, and it will be cut off by lumber men and sold at from six to ten dollars an acre. Then it will be settled up by the farmers of Michigan.

But the third body of timber lands is the body that concerns us most. It is the old pinery lands. Some of you have traveled over this country. I know that quite a number of Indiana people come up to our country to hunt and fish, and so some of you know perfectly well what these lands look like. Some may not know, and I can not tell you, because I am not eloquent enough to tell you how they look, for they look like "all possessed." There are a lot of blackened, fire-charred stumps. This comes as near as anything I can say to describe how they look. You might travel there for a day and night and not even meet man or beast. It seems as if the wild beasts of the forest have deserted the land. Our land has not been treated properly. I was speaking with a commercial man the other day, and he told me that he didn't believe that ten per cent. of the land was covered with timber like it was even twenty-five years ago. It is almost inconceivable what changes have been made in these lands. The story is one about like this. You have a sandy soil, an immense level country, although, by the way, you are on top of one of the highest water-sheds of Michigan; one from which the water goes in all directions. We have one large river which we regard as of great importance, and we will prove this to the world. You know the character of our country. Its history is like this. We once had a magnificent forest, with trees from one hundred to one hundred and fifty feet in height, and so large in diameter that they were large enough to drive through with a team of horses. But the lumberman came with his saw and axe, and along came the fires, and now there is a blackened mass of ruins and the forest is gone forever. This is at least the impression the land makes upon you. Nature is just as kind with you here in Indiana as she is to us. At the end of six or eight or ten years you will find that she has tried to re-roof the grounds. You will find a growth of poplar, birch and oak sprouts six or eight feet high. This growth will be all over the country, and it will be a pretty tolerable growth. But by this time there is just enough dry foliage on the ground so that when the man comes along who is forever smoking a cigar or a pipe and happens to drop the burning ashes from his pipe without stopping to see what has happened, this foliage is set on fire, not once in a hundred times on purpose, but from mere carelessness. It doesn't occur to the one that sets it on fire that these pieces of timber could ever be of any value. It never dawned upon them when they were setting fire to the woods that that timber could come into market. We then have another fire, and whatever nature has produced in the six or eight or ten years is gone. She does the same thing over and over again, and we have now stretches of country of thousands of acres which were in the first fire. We have charred conditions of all stages. This will indicate to you what the pinery lands are. And, mind you, we have a great deal of this. Some of you who have gone on the Michigan Central will remember when you leave Pine Creek, just north of Bay

City, you practically never see any more real forests until you get just below Mackinaw. You will see the same thing unless you go farther north. Of this land we have, as I have said, millions of acres. We have all kinds of people in our country, and some that are not fit to live there. I believe too much in the State of Michigan, and that is exactly why I am doing what I am doing. We have had these millions of acres of land left in these conditions for years and years. Just think of it, and think what a loss it is to the State of Michigan. The land in the southern peninsula has not produced any timber for ten or twenty years, for the simple reason that fire came along and swept down what nature had tried to produce. Thus we have perhaps ten million dollars' loss per year, which means in twenty years a sum big enough to buy all the woodlands up there. And we have lost it, not because it could not be helped, but simply because the people of Michigan never realized what they were losing. They were just like the people who are not in this convention today. They should go at these things just as a business man does. Just think of what a single forest fire does. And yet the State has never employed a single man whose business it should be to guard against the fires. We had a law about '46 which made a man a supervisor of a township, and he was asked to do everything. How could he succeed? One man can't attend to all this.

You can readily see from the conditions of the pinery forests that I have described that it would not be very agreeable to have to pay taxes on such lands, and the consequence is that most of the old lumber companies have left the lands and let them revert back to the State for taxes. Today the State of Michigan is in a most remarkable condition on this account. Just to put the case in a terse way, one-sixth part of the State of Michigan is in soak for taxes. Now the State has tried to do something with these lands that would be for the good of the people. They have tried to get men to take homesteads. I will tell you how they take them. A man looks around through a forest until he locates a cedar swamp which is worth five or six hundred dollars, then he hangs around until he gets the title to the land, and that very day, perhaps, sells it to some lumber company. And that is the end of that homestead, and the State unfortunately allows him to take another one when he gets another cedar swamp located. We have tried another thing. The law of the State says that these lands should be sold, and in order not to hamper the man who buys, shall be sold at a price set by the man in charge. Fortunately we have honest men in our State. That is more than some people can say.

Prof. Latta: We have some, too.

Prof. Roth: I am perfectly satisfied. I say that we have honest men because they refrain from giving these lands away. They have tried to sell the lands and get them on the tax rolls. Last fall eighty thousand

acres of land were offered for sale in one county, and out of this eighty thousand acres of just such pinery land as I have described, eight thousand were sold, and I suspect most of that was on account of the cedar swamps, and it brought the magnificent sum of \$1.25 per acre. The United States Government refused to take less than \$2.50 for the arid lands in Wyoming, Montana, and the bulk of the lands out there, and we in the State of Michigan have sold lands at one-half that. We do not neglect our duty by not putting the lands on the market. We have done our best and failed. It is interesting to know that the State of Wyoming has a standing fund and lots of forests to buy up, and the maximum price is \$25. What does that mean? It means that these people are willing to pay for their land, and that they have not lost any money at it yet.

To come back to what we have been trying to do. We tried to get rid of the lands, but at last the State has decided it is time to do something else besides getting rid of them, and has established a Forest Reservation, and has set aside as a starter all the lands that belong to the State within three certain townships, and has turned this over to the Forest Commission. This leaves the problem to the Forest Commission. They have complete authority over these lands. They can sell any of these lands if it suits them, and can buy any of the land within any of the three townships if they are considered worth the buying.

Prof. Latta: Does the State provide quite a fund for that purpose?

Prof. Roth: Yes, the State provides \$7,500 per year for the care of the Forest Reservation.

Prof. Latta: They may use this money to purchase new land if they care to?

Prof. Roth: They can use that money in any way they like. They can plant trees, hire men to guard the land, etc. Now this little forest reserve, for it is certainly a mere baby compared to what we ought to have in our State, is regarded as the nucleus of the State Forest. This land is something like the land I have tried to describe to you before. It is on the Muskegon River. We all know the geography of our neighbor States very well. I will say that his river is one of our biggest rivers. It extends away up to the middle of the peninsula, which is Upper Michigan, but looks as if it didn't belong to us at all, but we claim it. There used to be a lumber town on this river that supported in the neighborhood of some eighty millions of acres, and got out six or eight hundred million feet of timber in a year. The land is level land dotted with swamps. The greater part of this has been run over by fires. All the dry land has been burned. There is not one single acre of the whole lot that has any semblance to the old forests. A man who has not been

used to these woods would tell you that they were oak forests. You will see oak from three to five feet covering from one-tenth to one-third of the land, and there is hardly a marketable stick of timber on that land. It is no wonder some people object. They say, "What do you know about this? Have you tried it in Michigan?" We have to say, "No."

Mr. Swaim: Will you please tell me how you account for the oak being there?

Prof. Roth: That is very interesting. The oak has always been there. In the times when the pine forests were there, the oak had no show. The oak, by the way, is the only one of the hard woods that survived to any extent. When the loam leaves you all know the basswood leaves you. A few yards away none of these trees will be with you, and you will have only oak. It is something really remarkable. Now, as to being there. It has always been there, but when the pine was there it had no show. It does not reach any height or size. At this time you might have walked through the woods and after you came out if any man had asked you if there was any hard wood there you would have told him "No." But the oak has always been there. There are a few scrub maples there, also. The lumbermen and the fires together have cleaned out the pine forests. The only thing they could not kill was the oak, which has a capacity to sprout from the stump and keep itself going from year to year and from generation to generation.

The oak grows fast. It does not reach any great size. Thirty-five feet is a mere baby alongside the giant we have here, and sometimes they are not more than nine or ten inches in diameter. We used to think of such as of very little value, but let me tell you we have learned to think of timber differently from what we used to. We used to think of nothing less than sixteen inches in pine. I have worked in mills where they have refused to take Norway. Today they are glad to pay from twelve to fifteen dollars for Norway, but they can't get it even at that. We are offered today, on the Forest Reservation, a dollar per thousand for the old, dry, blackened, charred stumps that stand up a monument of former glory. We are offered money—good money—and we have plenty of applicants for each stick of dry, dead cedar, and they will even dig it out of the mud. You will see we have changed from what we used to be. Time has changed us. This is what I was to speak to you about. The first thing to do is to protect. This is the most important feature, even in the matter of reforestation. There is hardly any large area up there but what has now, from close examination, the making of at least a woods. It would not make a good forest, but a poor woods. There are at least fifty, two hundred, three hundred or four hundred of these oak sprouts coming up, and if they get any protection at all against fire it will not be twenty years when we

will have a lot of scrub oak which will at least be fine for fuel. It may be interesting to you to know that an oak fence post is considered better than cedar. Cedar will not outlast oak, as is usually supposed, but oak will outlast cedar. I think we have plenty to show for this. Then all the money that we are spending hiring men to go about and watch lest fires break out, will be justified by this growth which is right there now. We have now two Forest Rangers under the direction of a trained young man, who is the Forester; and, by the way, our young man Emory, is the first man in the State of Michigan ever employed in all its history to protect its greatest property. That may seem singular, and it will be a remarkable statement to make when someone writes up the history of our State.

In the year 1903, fifty years after the great slashing of our forests, we began to look around to see if this great property, the property worth billions of dollars—not millions, but billions—would not be worth protecting and looking after, and whether or not it would not be worth while to give the citizens something in return for the taxes they should have been paying year after year over into the treasury of our State. As I said before, we have two Rangers and one Forester. The Rangers are Chiefs of Police, and see that no fire breaks out. When a fire breaks out, they immediately start to work to have it put out, and the neighbors are enlisted to co-operate with them. They will hire men to help put the fire out. We are practically at the end of the second season without having a single fire that was worth taking into account, and I assure you that the man who told you that the fires could not be kept out of the forests does not know what he is talking about. They can be kept down, and they will. The old country people have demonstrated it for the last five or six years. Prussia, France, Switzerland and Denmark have demonstrated this by protecting against forest fires, and they consider it a terrible calamity when one-half of a small fire for us is consumed in a single year. They have men especially to watch. They watch not only for the vandals who seek to destroy the property, but also for the careless man. When we sell timber we do not propose that a man should make a fourteen-foot road when four feet would do just as well. We do not propose they shall do nothing but destroy our forests and not build them up. We do this much, anyway. We make a study of the land and see what the different portions are suited for. For let it be understood, that the State of Michigan does not want to block the farmer from this land. We want him there more than anywhere else. Every acre of good farm land will be only too gladly turned over to a real settler. We are getting the land classified to know the good from the bad, and also to know what to do. Those who live on a farm will realize how difficult it is to know what is going on on fifty acres of woodland. If it is hard to look after fifty acres properly, what do you think of looking after several hundred thousand? Most people do not

go through their wood lots systematically enough to know just what they have. We have to be careful about the trees that we attempt to raise. There are trees that we know almost of a certainty will thrive there. We do not get the Norway pine; we do not get palms. We set our trees out, and I think this would interest you. When I was first told to set trees out, Mr. Garfield, who is the head, and whom I hoped to see here, said to me: "Where are you going to get the men to set the trees out?" I told him that I would do just as I did in New York State. I was detailed to set out even a larger number of trees, and I got Canadians, Frenchmen, etc., whose great-grandfathers before them had never done anything but destroy the forests, and I lined them up in the morning and gave every one a mattock and told them they should do as I did, and I dug the first hole and showed them how. Possibly I would surprise you if I should tell you that two-thirds of the lumbermen would not know a pine tree when they see it, but this is true. Two-thirds do not know what can be done with that seed. But as I said before, we lined these men up and commenced to set out the trees. The first day they laughed, but the next day they began to take quite a great deal of interest. From that day the forest looked entirely different to them. Instead of a spirit of wanting to destroy everything, they wanted to preserve everything, of wanting to preserve every tree. At first these men thought it was folly to be doing as we were doing, but they kept on doing as they were told so long as there was \$1.50 in it for them. Before a week they had a totally different feeling than at the start. I have heard such conversations as this: "This will not amount to anything. The fire will come along this summer and destroy all this. This is fooling away a lot of good money." But at the end of the week something like this: "If I catch a fellow setting fire to this land," etc. I am satisfied that if any of that gang of men that were working for me should see that there was any likelihood of the plantation being burned up, they would work like Turks day and night. There was not a single one among them that would have thrown a cigar away and gone off to leave it to burn.

I suppose I ought to say something in regard to this planting. You will be wondering whether we broke ground. That would be an impossibility. There are too many pine stumps, half charred, over the whole country. We lined the men up and kept about five or six feet apart. I told the men to dig up the ground and plant one of these trees wherever there was an opening big enough to insure success for that tree. We dug up the ground as much as we could, and the last time I visited the place I found that the trees were growing beautifully. We have now a nursery in which we estimate that we have in the neighborhood of about six hundred thousand plants. We will make this nursery larger and will raise trees there by the million. The trees in this nursery are about two inches high now, but they will grow some in the next fifty years.

Prof. Troop: Is this reforestation going on only on lands controlled by your commission?

Prof. Roth: There is to my knowledge no great enterprise of that kind in Michigan. There were a few efforts made, but they were just spoken of.

Prof. Latta: Does the State in any way encourage the introduction at the present time?

Prof. Roth: It hasn't done so yet. The Michigan Forestry Commission is today recommending governmental and legislative arrangements. They recommend some legislation which will encourage it. We have the same trouble that you have. Precisely the same trouble. Mr. Freeman will explain this to you. We have a man who does take care of the woods in a most unmerciful way. In one county that I know of, this man—and he was none other than the tax gatherer—and he happened to be a man who understood about logging, and he estimated the timber at so much per thousand and made the tax so high that the man could not afford to pay it. This caused the man to destroy his timber. In another county the taxes were much lower. The first man was taxed from forty to fifty dollars, and the next man was only taxed about eleven or twelve dollars. These were taxed under precisely the same conditions.

You wonder why we are in such a rush. I will tell you why. It was only a few years ago since we shipped our pine to every State, almost. Kansas City, St. Louis, and those Western places were our principal points of shipment, but today there is not a foot goes outside of the State of Michigan. We have today in the State of Michigan precisely what you have in the State of Indiana. We have in our lumber yards in every town in Michigan, Pacific Coast shingles, red cedar shingles from Seattle, and we have lumber from the Pacific, and we have yellow pine, as you call it, North Carolina pine, and we have cypress. What does this mean? It means that the cost of such things will be very much more than formerly, because of the added expense for bringing them over the hot prairie country, a distance of nearly two thousand miles, through the desert part of the way. You will find more Michigan lumbermen in Norfolk, Virginia, possibly, than any place else in the United States. The amount of capital that was invested in Michigan in lumber in 1890 was just two-fold as great as that invested in 1900. It seems to me this is very serious.

There is another point. We who are thus connected believe that it is a waste—a waste of the worst order, a pernicious waste—when the State allows millions of acres of this kind of land to lie as waste land. This land is a nuisance, besides being a waste, for it affords a rendezvous for objectionable people, and whenever times are hard it is a place of more meanness than you have ever dreamed of. When all this comes

before you it is positively heartrending. We came across a family last winter living in a place like this, and they were positively destitute. They had nothing in the house but beds, and little enough of them. My Ranger found this. This is a very serious matter when you put a poor man on a poor acre. Give a poor man a good acre when you want to give him something.

Now, another word with regard to the action of the State. You will wonder why the State does not pay more attention to this. If this work is to be a go it should not be cast off on charity, but should be a business proposition. It should be either that or nothing. And now I want to say to you that I have no charity talk to make for forestry. If the State of Indiana should find out tomorrow that it would be better for it to clear off every acre of land, then by all means clear it. The history of Europe is old, and it is one worth studying. These people have gone through fire from start to finish. There was a time when they believed in burning off the woods. That time has long gone by. It is better in history, and still better in tradition. When I was born forestry was no longer talked of as an experience. It was a matter of course, the same as corn is with you. The State of Michigan today makes \$5 an acre over and above all expenses on every acre of its farm lands. This is just the same as on the farm and with the large corporations. We have three forms of forest in our country. When the father is a saving man you know what the boy does. The father keeps a very good forest, but he steps out when it is about forty years old. The boy says, "I will take the money now." That is the point. The State is just a large individual. A man always wants big interest. I have been asked within the last three months, "How much could we make by handling these lands in the way you suggest in the way of interest?" I answered, "Two per cent." That settles it immediately, for they want eight or twenty per cent. They would rather have ten thousand per cent. over night. This is the spirit of the American. He wants big interest, and wants it quick. What we want is two things—protection and reasonable taxation. Take a lumberman in the north, and bring him into court. Or, better still, bring in a horse thief and try to convict him for stealing horses. It is impossible as long as you have horse thieves on the jury. Now, this is just the state of affairs. We have very much just that kind of a time up there right now. They seem to have an idea that they must get this land away from the United States under any circumstances.

The next thing is taxation, and that will be dealt with a great deal better than I can. But at any rate we will be able to solve this matter of taxation before long.

Prof. Latta: When you ask for a dollar and get two it makes you feel good. We asked this gentleman to come over here and give us a talk, and he did it. I want you to think of this talk, friends. Mr. Freeman, the Secretary of the State Board of Forestry of this State, will

speak to you now. We have the methods of the State of Michigan. In our State it is a little different. Let us know what is being done along these different lines.

W. H. Freeman: If I were to come before you and talk for a day on forestry in Indiana I couldn't say the things as well, or the things that should have been said, better than Mr. Roth has put them to you. Our timber situation is somewhat different than that of theirs. Every state has its own methods of forestry. The State Forestry Association I think will reach direct to the people.

In order to say the things to you that I want to say, and to say them in the best way, I have written my remarks, and will ask you to pay close attention while I read, and I will then be glad to answer any questions.

THE PROGRESS OF FORESTRY IN INDIANA.

W. H. FREEMAN, SECRETARY STATE FORESTRY BUREAU.

The progress of forestry in Indiana is without question most complimentary to all concerned. The advance is clearly observable along two lines, the progress by the state as such and the progress of the people as individuals. The work of forestry as advanced by the state is divided into three distinct features, yet all are harmoniously linked in control. They are a legally established state department, a state experimental station and laws for the encouragement of individual forestry.

The state department consists of a legally created board of five members appointed by the Governor for a term of four years. In this connection the state also maintains an office in the Capitol and appropriates annually funds fairly ample for the prosecution and the execution of the duties designated for the board by the law which created the department. The original law was amended by the last legislature in several very beneficial ways. New and differently occupied persons were provided for in the appointment of the succeeding board and the funds for the office were augmented. The succeeding board will be composed of two lumbermen, a farmer and two professional men, one a member of our State Agricultural School and the other a person of technical forestry training to become the secretary of the board and the superintendent of the state forest reserves and experimental station.

In connection with the above advance the state has brought and established a State Forestry Station for experiment and practical demonstration of forestry principles, a 2,000 acre farm, and the same is now being put into order and operation in Clark County, Southern Indiana. It is the purpose to work out and demonstrate the practical problems of for-

estry for the benefit of the people of the state and to grow trees for distribution to any one within the state applying for them, and contracting to plant and grow them under instructions from the department. It must, however, be understood that the principal object sought in this experimental movement is the demonstration of the practical and the financial success of forestry on the cheap broken lands so abundant in Southern Indiana, and which are at this time almost worthless to the owners and thereby to the state. There are about 600,000 acres of this character of land which was formerly heavily timbered, but has been denuded and now abandoned except for scanty grazing, patch farming and for small second growth timber. In a later connection this feature will be more fully discussed.

In 1899 the legislature passed an act for the encouragement of forestry by permitting timberland owners to exempt a portion of their holdings from the regular land appraisement taxation, but this law has not proven very satisfactory, and my opinion of it is that it should be repealed. I so speak because it does not meet the requirements of the aims in such a law and is perhaps unconstitutional, besides it affords opportunities for dishonesty.

The progress of forestry with the people as individuals I am sure is as distinctly evident as by the state. In all parts of the state I find the people enthused with the movement, and they are putting into action their enthusiasm. A general awakening to the necessity of forestry conduct seems to be the universal condition. This sentiment is shown in the attempts to economize the present forests and general tree planting. This awakening has revealed to forest owners that timber is the most valued and most sought product now in the market. It is but recently that owners of good trees have found that they are worth big money. Consequently their wanton destruction and lavish use has been superseded by a sentiment of high appreciation and saving regard.

A good old quaker farmer in Hamilton County said to me a few weeks ago when I visited him at his request to give him advice for the proper handling of some trees and general forestry work on his farm, that his forest trees were the most valuable property he had; that the increase of value was greater on them than anything he could think of on his farms. Pointing to some rather fair oak trees he said, "Three years ago I was offered \$18 per thousand for them just as they stand, the next year I was offered \$25 per thousand just as they stand, and this last spring I was begged to sell them at \$35 just as they stand." "Why," he says, "do you know that I have cut, rolled into log heaps and burned to get them out of my way right on this farm a thousand trees better than any of them." The experience of this farmer is the experience of every farmer of land accumulation who has lived in Indiana since the Civil War. Because then of this commercial value forest owners are taking care of their timber land. They are harvesting only the matured

and damaged trees, they are letting nothing go to waste, they are protecting them against fires and in every community are forests from which stock of every kind is excluded by the owner, that the area may restock itself with new trees for the future. Areas that have been cut over and have grown up in dense thickets are being cultivated to form a future forest. All the weed trees of every sort are cut out and the right trees trimmed up to give them the best impetus of growth. Thickets in the nooks of fields that have in former years been viewed only as rendezvous for rabbits and quail are receiving forestry attention by many, and only a few years of waiting will reveal the wisdom of such conduct.

Another feature in which the people are showing their appreciation of the forestry movement is in the post and tie timber plantings so universally being conducted. In almost every community with which I am familiar farmers and land owners are planting black locust, catalpa, chestnut and similar trees for fencing posts and railroad ties for the future uses. I can not begin to estimate the extent of such plantings, but I am sure from the reports of nurserymen from this and adjoining states that millions of such trees have been planted in Indiana during the few years just passed.

The progress of forestry by the people as indicated by these features just discussed does not excel the progress in ornamental and protective tree planting. The Arbor Day planting for shade, ornament and protection upon the lawns of both public and private grounds and around the farm premises has been made the subject of personal attention everywhere.

The one form of forestry that has not received the attention which it should is the planting of areas to the hardwoods as commercial investments. There have been scarcely any notable tracts of the best hardwood trees used in our general manufacture planted to form the supply of those needed timbers when the present limited supply is exhausted. It seems to me that this feature of forestry should be promoted speedily by the State's making legal conditions for its advancement. I am inclined to think that the failure along this line is due to two causes, the best of which is the lack of definite knowledge of the time it takes for such plantings to mature to profit and also the degree of profit to the planter, and secondly the selfish disposition of most people to not do anything which they themselves might not reap the benefits from. They do not possess any very great altruistic tendencies. In these elements of hindrance there exists mistaken opinions which I hope will be soon displaced by experiments that will no longer leave chance for retarding this most essential work. More upon this phase will be brought out in a following discussion.

The needs of forestry in Indiana are not mythical. By some it is viewed as a fad, a cranky hallucination originated by an enthusiast for

trees. But there is not a more fundamental movement affecting the industrial, economic, climatic and ornamental welfare of the state than it.

By reason of Indiana's unexcelled hardwood lumber and timber supply in past years there are within the state today, in active operation, 940 woodworking establishments employing 39,672 persons. In addition, caused by other resources in the state, there are 2,746 establishments which use lumber and timber more or less in the getting out of their products of manufacture. Besides these enormous demands for the timber which now exists there are nearly 200 coal mines, more than 1,000 gas and oil wells using a large amount of lumber and timber in various ways in their operation.

Of the nearly 19,000,000 acres of unsurpassed hardwoods which was nature's existing gift to Indiana, not more than three-quarters of a century ago there now remains but about 1-75 of that amount, and not more than 1-16 of this fractional part possesses merchantable timber such as the manufacturing institutions are seeking and must have.

The large manufacturing industry, the great productiveness of the soil for the larger part, the thickened population now energetically employed, together with the depleted forest supply in sight furnish a fine problem for economic solution. These manufacturing industries to continue in existence must have the material with which to operate. If it does not exist within the state then it must be imported or the industry exported, which fact will be determined by the corporation from the standpoint of its own financial interests. If the material supply becomes exhausted the industry will cease. The timber supply within the state is small and but little effort has heretofore been made to save and replenish it. It can not be manufactured. It must grow. Not all the uses of wood can be substituted. Wood is a necessary product in the general industries, and hence the logical forestry movement.

The large population demands that the rich agricultural lands shall be devoted to agriculture to supply the daily living necessities. The tiller of the soil wants the returns from his land quick, and hence he will not indulge, if he possess rich land, largely in forestry, because of its remoteness of return, even if he made more and easier money. Hence the forestry problem in Indiana. The industries must have wood, and the cheap unfit lands for good agriculture must grow the trees to supply the demand, and thus leave the rich agriculture lands to sustain the population with the products of living. The cheap lands will grow the timber if devoted to it systematically. The timber will keep the industries, the industries will employ the people, and the people will demand the agricultural products of the farmer to live upon, and thus a complete division of labor of such auxiliary relations within our state that even a dyed-in-the-wool pessimist cannot but admire them.

I do not present this thought to you as a phantom to scare you or to hold up to you that upon forestry depends the ultimate and absolute

salvation of Indiana and its industries. But I do present these thoughts to you with the firm conviction that active forestry along the lines advocated will prove one of the greatest factors of industrial security and a wise course of procedure in order to meet the future problem when it comes, as come it has to other nations, and come it surely will to our nation and to Indiana as a part of it. It may not happen within our time, but it will come to our posterity, and to them we owe the obligation of an honest effort in this matter.

In connection then with this major idea of forestry which I have presented, and before I take the minor features, I want to give a few ideas of legislation which I am of the opinion will do good. I don't mean that we can legislate away the confronting embarrassments. If legislation could solve the timber question then it would be fairly easy of solution because the people are in sympathy with the movement, but that can't be done. It is action and not law which will solve these problems, but legislation may aid action, and that is what I want to consider. If a law were enacted which would encourage the devotion of the cheap and broken lands to forestry, would it not be a good law? I am convinced that nearly all such lands are quite as good for forest growing as the rich lands. After careful investigation I am sure that the larger part of the wood-working institutions now located within the state use as the raw material second-growth hardwoods of from eight to twenty-five years growth, and that it possesses the prime attributes at such ages for the uses. I am also convinced that under right cultivation a good quantity of material can be produced upon an acre in that time. We are not sufficiently informed to state facts in this, but already we have begun the movement to get these facts and only need more time. A great many evidences are available which convince me that this major plan is a good one if backed by suitable legislation and administration. I have in mind that if a law were enacted exempting from taxation any such or all lands for that matter which the owner will contract to devote entirely to forestry for a period of years under the direction and instructions of the State Board and that after such period the product value only be taxed that it will prove a very beneficial law. My opinion is that such a law will cause investments in these lands and forest estates will be established which will not only be more profitable than endowment insurance to investors, but will enhance the value of such lands, solve to a good degree the timber question and generally promote the welfare of all.

Another need which it seems to me should be more looked after by the farmers is the devotion of a practical part of the farm to permanent forest. If every land owner, it matters not how productive his soil may be, will set aside a certain portion of his acres and devote the same exclusively to forestry that it will prove a wise course for him financially and generally, and will go far in the solution of the hampered condi-

tions of timber supply in every community. I believe in this connection that the law just mentioned should be made to apply. Three things are wrong with the present forests, namely: they are poor in the quality of timber which they possess, they are more devoted to grazing than to forest and are not rightly located on the farm. The vast majority of the timber now standing is beech and other similarly valued trees. They are mature, damaged, and do not pay a fair dividend for their retention. The area is also constantly grazed, and thus a new growth is prevented from forming. The location is a result of consequence and not of choice. When the farm was planned clearing began at the premises and expanded in all directions until the remnant of forest remaining is in the remotest corner and perhaps occupies the best land on the farm. In ninety-nine cases out of every hundred, if half or even less of the present forest area were devoted exclusively to forest purposes and the remaining part to grazing far more of each would be obtained. A forest tract if not too densely sodded, and if protected from fire and stock, will soon form a dense undergrowth, which if given a little forestry attention will in a few years exceed the most sanguine expectations. If the natural conditions are not suited because of sod and lack of seed trees, the ground can be broken up and seeds scattered of the kinds desired. Frequently, however, when the sod is broken the seeds lying dormant in the humus spring forth and sowing is unnecessary.

It is my judgment that farmers should take this matter under sincere consideration and plan new forests on their farms. Place them where they will form a protection to the premises or otherwise better located. I also think the above law will aid much in the promotion of this feature, though I am sure I do not want legislation to usurp the duty individuals owe themselves, but this feature largely carried on will be so general and so beneficial in results that I think the state should encourage it by some legislative action that will insure its being done. It will be casting bread upon the waters to be gathered up many days hence, some fifty, some sixty, and some a hundred-fold.

Prof. Latta: If you have any questions now is the time for them.

Mr. Stanley: In regard to the underbrush that will spring up in the woods, will that retard the growth of the timber?

Mr. Freeman: Yes, it will, and should be kept down. That is one objection we have got to not turning the sheep in. They will not confine themselves to these bushes, however. It would be a fine thing if we could educate them to eat just these and nothing else.

Mr. DeVilbiss: Do you believe that all is true that is claimed for the catalpa?

Mr. Freeman: I am glad that this question has been asked. I intended to express myself on the Catalpa Speciosa. It is my conviction

that far greater things are claimed for the catalpa than it can ever reach. It is a good tree for its purpose, but it is put on the market now just on the same plane as a patent medicine, and when you say that it is good for everything it is a mistake. In the first place it is not a slender tree. It is naturally a small branching tree. If the plant is given the right kind of cultivation it grows readily. If you plant the tree and give sufficient root space and cut it back to the ground you can get good results. John P. Brown, of the Big Four Railroad, had a patch of the catalpa trees near Brightwood, Indiana. At the end of five years they did not give evidence of doing what was wanted—they grew low and branching. He seemed discouraged, and asked what should be done. I advised him to cut them back. He did so and they came out fine. The entire twenty-five acres were cut back a year ago last March. The first season's growth resulted in straight sprouts ranging in height from ten to twenty-five feet without a branch. A picture of this will appear in my next report, and will show this season's growth. The trees are far ahead of what they were at the end of five years. I am firmly convinced that this is the only way to treat the catalpa.

The statement that the catalpa will last a hundred years I believe is false. There may have been one that did that, but that is not evidence that all of them will do it.

A Delegate: What trees would you suggest to be planted in a wood lot?

Mr. Freeman: If you will plant hickory, and oaks, and other valuable trees you will have a good wood lot. Plant the best commercial hard wood that we have.

Prof. Latta: I would like to ask if a great deal of walnut is not planted and protected in Central Indiana?

Mr. Freeman: Not to my knowledge.

A Delegate: When is the best time for trimming?

Mr. Freeman: My experience has taught me that the time for this is about the middle of June, or after the sap has returned again. After full sap is in. The old law is probably as good as you can get.

Mr. DeVilbiss: Would you plant the nuts in the fall?

Mr. Freeman: Always. Last fall we gathered twenty-seven bushels and put a pile of sand out in the ground. They were subject to the freezing and thawing, and in the spring when they came out they were bursting and swelling. We planted them and in ten days they were through the ground. I have a perfect stand and they are about two feet high, and this is the first season's growth.

Mrs. Johnson: There were quite a number of walnuts sprouted in the garden. Do you think I can re-set them?

Mr. Freeman: Not very well. You would not have very good success if you did.

A Delegate: The acceptable time is in the fall?

Mr. Freeman: Yes, I would advise that.

A Delegate: I set out my catalpas a year ago last fall, and when spring came they were out on the ground. Would that be the same with the walnut?

Mr. Freeman: I think not. Some soils will heave out if there is considerable freezing and thawing. If you plant in the fall plant deeper. I planted some in the fall and planted them rather deep and they did nicely. I would advise planting in the spring, however.

A Delegate: At what age would you commence trimming trees?

Mr. Freeman: I think not before three years.

A Delegate: If you intended to plant walnuts would you put them in the ground this fall?

Mr. Freeman: Yes, I should. The rule is to plant a seed twice as deep as it is thick.

Prof. Latta: Would you plant them where you wanted them to grow?

Mr. Freeman: Yes, sir.

Prof. Weigle: What is the distance apart you advise in planting?

Mr. Freeman: I advise five feet. You may think that is too close, but I think it is all right.

Mr. Scott: Would you advise planting the seed of the catalpa?

Mr. Freeman: I would get the trees of a nurseryman and then transplant them.

Mr. Scott: But isn't there several different species?

Mr. Freeman: Yes, there are four different species, but you are almost sure to get the right kind from a nurseryman.

A Delegate: Would you advise planting catalpas along the roadway to be used as posts?

Mr. Freeman: Not as live posts, I never would do it. I would not give such a thought as this a second consideration. In the first place the trees will not grow in line. One will grow fast and the other will grow slow, and so taking it all in all you will not get good results.

A Delegate: I do not quite understand you. I was thinking of growing them for posts along my line fences.

Mr. Freeman: I thought you meant to leave them standing, and attach the wire while they were alive. I would never consider that.

Mr. Case: Would it be best to set the catalpa or the black locust on sandy ground to make fence posts. Which would be best.

Mr. Freeman: I am of the opinion that the locust would be best because I believe it is a quicker grower and requires less work in order to get the best results. I understand that this is a high, sandy soil. Both would grow well on this soil. Mr. Mayer, of Logansport, planted fifteen thousand black locust trees on his farm last May, and today they will average from ten to twelve feet high. This is a year's growth you might say.

Mrs. Meredith: But grass will grow under the locust tree, and when we live in a good country we can not afford to give much land to forestry.

Mr. Freeman: I think we can.

Mrs. Meredith: Isn't that a point in favor of the locust?

Mr. Freeman: Yes, if we can forget the present idea your idea is a good one. Some think blue grass is worth more than trees.

Mr. Starley: Will these locusts do well on woodlots where they are shaded?

Mr. Freeman: I have not had good success under such conditions. Perhaps the stock tramped them down.

Mr. Lodewick: Would it pay to plant these along our fences?

Mr. Freeman: If we were planting wheat or corn we would think it would be an injustice to both, but it will not hurt grass so much. Perhaps I do not advocate planting trees around over the farm as much as I should, but I think it is better to devote a certain place to them.

Prof. Troop: I would like to ask how much ground you devote to your fences?

Mr. Lodewick: I am in the fruit business and I wanted to plant as a wind break.

Prof. Troop: Your idea is all right if you plant close enough, but you want to plant very close and in single rows.

Mr. DeVilbiss: Would you have to cultivate to make the tree grow?

Mr. Freeman: You are speaking of the black locust? I hardly think so. It is a very hardy tree. I propose, however, to get the sod out of the way and keep it out for the first year. The trees bunch together and you will get body.

Mrs. DeVilbiss: I have noticed that if you plant trees along the fence, especially along the woods fence, they will grow so much more rapidly. The growth is so much faster in the forest area than it is out in the open.

Mrs. Davis: In regard to planting trees along the fence. We have so many vines in our woods, like the poison ivy. We have to contend with that. If we have trees along the fences we can not cultivate them like we could in a clear strip of ground. If we try to cultivate them we get poisoned. I am very fond of shade trees and I think the farmers of today should plant them.

Mr. Lodewick: Isn't the ground richer along the fence than out in the open? In a rail fence line for instance, we have a better nap, and I think this makes it something like new ground.

Prof. Latta: Are the farmers availing themselves of the present law which encourages these woodlots?

Mr. Freeman: The attempt has been good but the results bad. Fifty-seven tried and twenty-three stood the test. This was because of the law. In the first place that law is deficient in that it does not provide for any systematic execution of the law. It is taken advantage of. This can be done every four years. The farmer can cut his timber this fall if he cares to, and there is no law to get at him. Therefore there is scarcely a timber tract that complies with the law. The Attorney-General interpreted that only such trees as were mentioned in that law could be cut, so the law is a failure. It is unconstitutional. All similar lands should be taxed equally, but it is allowed to stand for the good of the cause.

Prof. Latta: I would like to ask Prof. Roth one question. He has given us a large fund of information but I wish to ask this. In the old country is there any infallible rule as to the number of trees that it is advantageous to keep growing on the acre? Does it vary with different kinds of trees, and with different soils?

Prof. Roth: If you started with an acre on the upper lands. A German forester of fifty years ago would have planted five thousand trees, but he would not have hoped to keep more than five hundred. So you see there must be considerable waste. It is impossible in any kind of a forest to keep the same number of trees. The idea there is always just this. Keep your land and your light all right. The light is the foremost source of the food of the tree. The tree gets its water, and with it a few mineral salts, but that is all it gets. A tree lives just like we do. They can not eat one-half pound or a pound in solution, but they must have prepared food material and that comes to it from the leaves through the agency of light. If we want to nourish the tree from the ground there must be a deep layer of mulch. The leaves of the tree should form the topmost layer of this, and the organic material will be there. This is the kind of condition the forester wants. It was under these conditions that your forests in Indiana are what they are. It is under these conditions that every tree has thrived, and besides this let me add, that these are the only conditions under which a tree will ever thrive well. You may throw poor farm land into woods but there will be a very poor crop of timber. If you want a forest that is a forest, and will be a good forest, you must return to forest conditions, and this is the simple rule. Keep all the trees that the land will stand to utilize the air and soil. Don't let them fight. I must add this, for if you should plant an acre of land with five thousand trees at the end of three or four years at the outside, they will begin to fight. If you should allow them to go for eight or ten years you would have a thicket through which a man could hardly labor. You will find these conditions with the good as well as with the poor, for the poor are constantly getting the water and light that the good ones should have and ought to have. Be sure of this. Do not let them fight.

Prof. Latta: In my mind this is a matter of judgment.

Mr. Van Deman: I would like to say a few words on this subject. I am deeply interested in forests but more deeply interested in orchards. The forests conditions of this country, not only in Indiana, but certainly everywhere, are in a serious condition. And it is certainly not a day's job lost in taking care of these conditions. It is the very best course that a state can take to endeavor to reforest the areas of land that are denuded, and to preserve above all things what we have already. The whole of our industries depend upon a certain normal proportion of forestry area. It is so in all parts of the world and it has been so from time immemorial. It seems to me that it is the disposition of the American people to destroy the last tree that stands before they will begin to plant another. We ought to preserve our woodlots and the State of Indiana ought to take care of them in the most sensible and reason-

able manner, and I am certainly pleased to hear that something is being done. I have seen the great barren stretches of pine lands, the blistered, barren portions of Michigan. I have also seen on the Pacific coast sights such as these, and it is enough to make us shed tears to see such places, but perhaps if we should manage these places correctly they would soon be clothed with verdure and with the native forests.

One point was spoken of a short time ago in regard to how many trees should be planted to the acre. I look to what nature does, and nature is certainly a great teacher. I have in mind a region in Virginia, which I noticed when I lived there for a short time, where the prevailing timber is two species of pine. It is astonishing how quickly nature will reforest a barren place. It was so down in Carolina, but more so in Virginia than any place I have ever seen. If you would plant a corn field and a potato field there and let them go for five years, it would be a solid mat of little pine trees just as thick as the hair on a dog's back—just as thick as they could stand. There are millions and billions of pine shoots. They grow not five hundred to the acre, or five thousand to the acre, but about five millions to the acre. You have them there in all stages from the infant to the yearling. These trees gradually die out. They are so thick that some of them must die in order to give the others a chance. It is simply the survival of the fittest. The decayed matter around the roots is a source of the growth of the tree. In the hilly country of Virginia after a heavy rain there will be gullies washed out where you might bury a horse and wagon. Nature will cover these places and they will grow up.

Now in regard to the catalpa I want to say that I think it has been overestimated. It is a good forest tree. It grows well in the lands along the Wabash, on the hills of the Mississippi, etc. I have seen them two feet thick, but it is only along these alluvial lands that they will attain any such proportions. If they are not attended to correctly they will branch out and take the form of an orchard, and the trees will be almost worthless. The wood is very durable, but its durability has been exaggerated. It has been stated that the old forts that General Harrison built in the southern part of this State—at Vincennes—were made of catalpa posts, but I was fortunate enough to see one of these on exhibit at the State Fair one year, and I said to my friend, Mr. Regan, who was with me, "I don't believe that is a catalpa post." So I took my knife and cut off a piece and it was a mulberry. The catalpa will not last as long as the mulberry.

Mr. Harvey: Must we go into the thickets and clean them out, or allow the undergrowth to develop?

Prof. Roth: I just want to suggest one thing to you folks here and that is this. You folks here in Indiana are most fortunate, and I would suggest that you take under consideration a law, and work for its pas-

sage. I believe it would be for the good of Indiana. The state or Pennsylvania tried buying all the poor lands all over the state for not to exceed five dollars per acre and that they put them in charge of the forestry commission. From what I have seen and heard you have made the right plans. You have a Forestry Commission which is perfectly qualified to take charge of the land, and in the end bring great good to the State. Let me say one more word here. Remember always that when your State of Indiana, or any other state, undertakes a thing of this kind, it involves them in a very, very important point and it is just this. When the State of Indiana some day or other has timber to sell, it will not be merely for the stumpage price of timber, but a sum at least double that. We pay a bonus of ten thousand, twenty thousand or fifty thousand dollars to the man who will come in and start a factory. Why do we do that? Because we believe we will have indirect benefit, which will be a benefit to the town. We will not get a cent of the dividends. The people of the town will get to board the men, rent houses, sell goods, etc., and we feel that we can afford to throw that much money away—good money—and why do we do it? Simply because of the indirect benefit we expect to derive. The benefit of the lumber to the State is as this indirect benefit. Every log that can be cut in Indiana is worth fifteen or twenty dollars, but a great deal besides this is this great indirect benefit in that it keeps somebody at work cutting it down, etc., until it is in finished material.

Prof. Latta: If you will permit me to make two or three announcements the meeting will stand adjourned until 7:30 this evening.

I should like to have a Committee on Resolutions to formulate a set of resolutions to set forth to the public the general sentiment of this meeting. We have heard things today that people generally ought to know, without question. It is a meeting of an educational nature, a matter of information as well as education. I will appoint on this committee: Mr. Talbert, of Albion; J. C. Kimmell, of Ligonier, and J. W. Forker, of Kendallville.

I should like for this committee to be ready to report as early as the opening of tomorrow afternoon's session.

We will now stand adjourned until this evening.

TUESDAY EVENING SESSION.

Prof. Latta: The theme for this evening is "Opportunities in Agriculture for Trained Young Men and Women." This is to be presented under three sub-heads—first, "The Need of Special Training for Agricultural Pursuits;" second, "What the Agricultural Colleges Are Doing to Meet This Need," and third, "Opportunities for Those Who Are Specially Trained."

The speaker who is to speak on the first topic is an ex-professor in the University of Michigan of Home Economics, and now has the proud distinction of being one of our Indiana farmers. I take great pleasure in introducing to you Mrs. Virginia C. Meredith, of Cambridge City.

Mrs. Virginia C. Meredith: There is one time when I feel proud, very proud, and it comes once in ten years, and that is when the census taker comes around and says, "What is your occupation?" And I say, "Farmer." And he usually says, "You don't want me to put your name in as a farmer, do you?" I certainly do, for I am a farmer, and I have an opportunity to gratify my pride once in ten years.

I am to talk this evening on "The Need of Special Training for Agricultural Pursuits." I will refer only to those means that could be met by the Agricultural College, as I understand what can be or ought to be done by an Agricultural College. And by agricultural pursuits I am going to include not only those things that have to do with plant and animal life, but I will also include a very important part of agriculture, and that is the home and the farm, and the need for special training for the one who makes that home.

I suppose, like myself, all here are decidedly enthusiastic about forestry. We see great possibilities in this system, and I am sure we have larger and broader views, and certainly a greater fund of knowledge as to that subject. Is there any need for special training in agricultural pursuits? Another way of putting the question is: Are we satisfied with what the acre is doing for us? Are we satisfied the acre is bringing us its very best returns? Do we think we are getting enough wheat, enough corn; are we getting the quality that we want in apples and pears and peaches and strawberries, and are there enough being raised of these different fruits? Does everyone have as many apples as they want, as many strawberries? Are there any needs along this line? Is the acre doing for us all that it should?

I was very much pleased this evening when I was asked to take a drive around Kendallville. I saw the beautiful streets and homes, and then I saw an onion field where they tell me they will raise nine hundred bushels of onions to the acre. Isn't that a great thing? How many are doing that for the acre? And have we any right to expect it from the acre? Down in our county we had a yield of wheat of from five to seven bushels average. The people are taking five or six acres to raise what ought to be raised on one acre of ground. Who gets the thirty bushels of wheat to the acre? I have a neighbor—a woman farmer—who got thirty-two and one-half bushels to the acre, instead of five or six. How did she get thirty-two and one-half bushels to the acre? Was it luck, or did she make herself a student of seed vitality and the right kind of seed for her soil? I say she got thirty-two and one-half bushels to the acre because she studied the subject of seed vitality and the

amount of seed to be sown on her soil. It was not luck. So, then, there is a way of getting over thirty bushels of wheat to the acre. Then there must be special training.

I was in France a few years ago and they were harvesting what I thought was a good crop of wheat, which was an average of fifty bushels to the acre for all of France. Think of that. The average in England, as you know, is something over thirty bushels. Now France and England were old before the United States of America was discovered, so that there must be something in the tending and studying of the soil, vitality of the seed, choice of variety, etc. We need it. If we had it we would not have to own six acres of land in order to get what we should get from one. I think we have a very interesting department resulting from the study of the seed corn in Indiana within the last few years.

I once heard a young man who had spent four years of time and money in a college say that if he had learned nothing else but what he learned about capillarity he would have been well repaid. He had learned it in college, and he had learned it in connection with the cultivation of corn, etc., and in dry seasons he could raise additional bushels. So, we who are not getting sixty or eighty bushels of corn are in need of special training that will enlighten us about the soil, the acre—about the seed and its vitality, and about its cultivation—knowledge of the principles, which is special training. What do we mean? Simply this. First to observe accurately and to think correctly, and to draw conclusions with sound judgment. A trained mind is able to do that much more readily than a mind which is not trained. I am particularly interested, and anyone who lives in Indiana must be, in live stock, and yet, what do we find? Cattle, sheep, horses, hogs and everything else that have been bred in Indiana the same for years. There are great possibilities in this line, but yet, how many farmers are there who are equipped with cattle that are fit either for meat or beef; sheep that are fit for mutton; horses that are fit for draft or speed horses. There needs to be special training along these lines, because it is most profitable—the most profitable line of husbandry that can be engaged in. I was very much interested a short time ago to hear a friend of mine say that he raised tomatoes because he found he was able to sell more water in that way than any other way, ninety-five per cent. being water, and that took none of the vitality away from the farm. So in the matter of live stock. We are carrying little fertilizer away from the farm. As you know, there is a deep-seated prejudice against pure-breed cattle, the breeds which we call pure breeds. A pure breed makes a much better butter cow, much better beef. We find any amount of cattle that will lay on perhaps as many pounds as the very best pure breeds, but they haven't the quality which, put on the market, bring high prices, so the profit is lost. So we need special training along these lines.

To illustrate: Opportunities often come to people who have this

special training. I want to tell you of a young man who knew how to take care of cattle, and his services were engaged by a rich man on a fine farm, and he was very successful. In a short time the interests of the owner were drifted entirely away from the farm, and he could not dispose of it in the way he wanted to. So this young man got an opportunity to buy the pure-bred cattle at a low price, and this was certainly a great opportunity. This was on account of his special training. I fear we neglect our opportunities. You can read in papers and books where someone will tell how he can put on two hundred pounds of beef, and another four hundred pounds of beef from the acre of grass during the season. This, of course, was done by people who had had special training. These things are interesting, and we live in our own possibilities in this State of Indiana.

I want to tell you about a young man who studied in an agricultural school. He was not so very young, for he was about thirty-five years of age. He found that he was getting a good deal from his experience, because it enabled him to cut double. He did not come with the intention of staying the full time, but when he went home and found how much he had really learned he went back to the school for the full course, and graduated when he was thirty-eight or nine. That man is now raising every year four or five thousand range lambs, mostly upon rape, which he plants with his corn. He is doing this year after year, and his lambs top the market in Chicago. Isn't this a wonderful use of the acre—that ability to make an acre bring you the very last dollar of profit? This special training gives additional power, and we all need it. Who has money enough? Certainly no farmer. We want more money from our acre. I know a young man who happened to fall heir to some land that was very thin. It was not a very promising place on which to begin farming. He was a graduate, and of course had this special training, so he thought the matter over carefully and found that his land was well adapted to melon raising, so he began to raise melons. He supplied the market with melons and cabbage. In about six years that man had saved enough money to build him a house, and he now has a more comfortable farm. He has a wife who was instructed in domestic science. This man knew that melons would be profitable and could be raised well, and he knew this on account of his special training—the very training which he got from within the agricultural school—for this training gave him an insight into the subject and an enthusiasm for it, and this, backed by advice and counsel of older people, caused him to make a wonderful success. Now many have the acre and many have the special energy that we can put in these different lines. There is so much to be said along this line of the acre, and that is the point from which we should estimate everything we do on the farm—"the acre."

I wish to speak briefly about some other phases of this subject.

People are all the time saying that people are discontented on the farm, usually because the women on the farm are not happy and contented. I believe that there is need of special training of the farmers' daughters along these lines. They should be trained along the point of animal life, for that is such a large part of farming. Not that we want the girl to be a farmer, but we want her to be in sympathy with the life on the farm—with the father and brother—and with the husband. She should understand plant and animal life as taught in the classes by teachers of enthusiasm. If this is done she will see so much more in the farm than before. This special training will also aid them in designing houses and barns which are fit for farmers to live in. This is something that will make their lives more comfortable. This is much nicer than being compelled to live in a house which a carpenter will put up for you. The home is the place where the opportunity is given for right development of the physical and spiritual natures, and the girl who is in school is taught about cookery, about sewing, and the elementary principles of hygiene. The girl who is specially trained will make a better housekeeper, a better wife, a finer woman, and a greater factor in the social life of the country. So, then, we have the greatest need of this special training for women who are going to live in the country. There is a great need of this. There is a great need everywhere. I wonder if you would be shocked if I were to say that I think there is a special need for the training of women to be farmers. I live twelve miles from my father's, and I drive that many, many times in a year, and for six miles on every side of the road every farm is owned by a woman, and only one woman lives on her farm. She is a German woman who was left a widow with several children, and she was enabled by this farm to raise and educate these children. Some of these women who owned these farms longed to live on them, but they didn't know how to manage them. One of the greatest changes which has come to us in the last fifty years has come through the inheritance laws of the United States, which allows a daughter to inherit equally with the sons, and so it has come to pass that girls inherit farms. Sometimes they do not know what to do with them. There are a great many women who never get married for the very best of reasons. May be you don't know what they are. There are not enough good men to go around. This woman would like to live on the farm if they could make things go, and there is no business to my mind so suitable to women as farming. She is removed from competitors. If she undertakes to be a doctor, medical students will not have a woman in the class if they can help themselves. Ministers will not permit women to preach. Men do not want women in the professions, and I for my part, do not want my girl to be a clerk, or do any of the things girls do down town. I would so much rather she would farm, because I know that every good man on a farm will help her if she needs help, and will do it in the very best

spirit in the world. We have all seen this many times. If a woman is left a widow every man wants to help her. They do not say: "You shan't farm here in my neighborhood." I know a woman who lives on an eighty-acre farm that has put four children through the University at Bloomington. Wouldn't you rather see your daughter managing a farm, a little one or a big one, than see her working down town? I think it is a fine thing. Since girls can get that sort of an education, why not give it to the girl that wants it?

All along the line I see there is need for special training. We want more from our acre—more dollars. Why? We want the dollars that we may buy culture; that we may buy comfort; that we may exercise philanthropy. The dollar is a beautiful thing when it is correctly used. Anyone can earn a dollar, but so few know how to spend them wisely. So we want more money from our acre; more fruit; better cattle; more butter, more cream, etc. We can do this only by special training. There is no such a thing as luck any more. We used to think that the witches got into the milk and the butter would not come. But since we have got the thermometer we have found that witches did not control the cream. The housewife now knows what she is doing, and the reason for doing what she is doing. She has the special training which gives the reason back of all things, and that gives skill in the art. I think the philosophy of a thing is very important. If we are trained in an agricultural school by a professor who understands what he is doing, we will get the science, art and philosophy, and we will be equipped to live. It is better to learn how to live than to learn how to accumulate dollars. Yet, this special training gives power to get dollars, and the power to use the dollars wisely. I thank you. (Applause.)

Prof. Latta: You will see by reference to the program that we have put down questions after each one of these divisions. We thought the discussion might take this form. Has anyone any questions to ask?

A Delegate: I would like an explanation of how that man raised so many lambs on rape raised in corn?

Mrs. Meredith: I would not like to say that he raised them on rape exclusively. But rape was the principal thing. I know this gentleman quite well, and he has been extremely successful. This fact never occurred to him until after he went to college. While he was there he saw some lambs being fed on rape, and he took the method back to the farm. So he got this on account of his special training.

A Delegate: I tried rape in my corn once, to my great disgust. My, what a mess there was. You could hardly wade through to cut the corn. If I hadn't had a good hired man he would have left me.

Mrs. Meredith: Why didn't you put the sheep in to mow it down?

Prof. Roth: I would like to ask Mrs. Meredith in regard to her opinion about the isolation of the farm population. Two-thirds of the people of the United States are farmers. It seems to me that we are isolated altogether too much in this country, and I have wondered if this was not the cause of the discontent. In Germany the farms are not so large, and consequently the people are closer together. This makes it more like the village method. I wonder if it isn't likely that we in this country will sooner or later adopt the same method.

Prof. Latta: Doesn't this question give point to your plea for special training?

Mrs. Meredith: I never felt so lonesome in my life, or so homesick as when I was in Germany. I have lived on the farm. It seems to me that there is always plenty to occupy one on the farm, so that they could not feel lonesome. We have so many advantages on the farm. We have good roads, and an ever endless number of good books. We do not feel lonesome, I am sure. There is a class of people, and we know them very well, who have no resource within themselves and are not satisfied unless they are looking out of the window at people passing by. For this class of people farming is not the thing. There is one great need today, and this is that the country school teacher should have a special training. They should be specially taught. I know a girl that is teaching school that was trained in this way, and she is a wonderful teacher. She succeeds in getting the pupils so interested. I know a girl who is teaching a country school, and if you will believe it, they raised her salary five dollars on the month without being asked to. These are the kind of teachers that are needed so much, and in my opinion only the teachers who are trained in agricultural colleges are prepared to teach about the animal and plant life, etc., the very things which the children should know. There is a special need for this kind of teachers.

Mrs. DeVilbiss: I want to say a word about isolation on the farm. I lived in a village once, and I never got so lonesome in my life as then. I have never been in Germany. I could not stop to take my potatoes out in the yard and talk to my neighbor over the back fence while peeling them. We talk about isolation on the farm. I can not see what people mean. We have all the books that have been produced before us for study, and all nature to study, a great opportunity to learn. Why, then, should we get lonesome? We have just as many advantages on the farm as in the city. Pianos are no more expensive, and besides there is a feeling that when you sit down to study you can study. There isn't someone to run in and gossip. When you want your children to study you can have them study; there is nothing to take their attention or to call them away. I was told not long ago by women who live in the city that they did not see how in the world I got so much time to read,

for I read more than three or four of them together. The only reason is that I am not bothered by somebody running in and out all the time. So far as isolation on the farm is concerned I have never found it. Never in any way, shape or form, because we always have something interesting to occupy our time.

Prof. Latta: If there is no other questions we will pass on to the second division of this subject, "What Agricultural Colleges Are Doing to Meet This Need," by Prof. H. E. Van Norman, of Purdue University.

Prof. H. E. Van Norman: Mr. Chairman, Ladies and Gentlemen—Before the program began we who were to furnish the major portion of the work this evening were discussing the closeness with which the subjects were related. When Mrs. Meredith began I thought she was really taking a part of my thunder, but before she ended I saw that she had added a great deal.

Will you stop and go back with me to view the requirements which every young lady must have to manage her farm? Do you suppose for one moment that I expect this young woman to go out and drive up the cows and milk them? Pardon my reference to cows, because this is next to my heart, as I manage a dairy. Do you suppose the young lady is to go out and stack the hay or shuck the corn, or do any of the work with her hands? Not for one moment. What must she do? She must be the brains of that farm. She must know the difference between farming of today and tomorrow, and the farming of the last fifty years. The successful farmer is the farmer of now, and there must be a tremendous amount of good, hard gray matter put into the work. There must be brain work, if we succeed. There are not many men who can do a day's work with their hands and a day and a half's work with their heads. So, if we are going to have farming of this kind, it has got to be by means of more headwork, and there is where the college comes in. It furnishes the training which helps a young man or woman to use the head which God has given them. This enables them to make the most out of the facilities which they have. Now, then, how does the college do this? The college training may be divided into these classes: In the first place, it furnishes knowledge of principles. In the next place, it furnishes the knowledge of facts. In the next place it gives a moderate amount of actual practice along certain lines, which tend to clinch and fasten these facts and principles. And finally, it gives that which was talked of in the latter part of Mrs. Meredith's discussion. It takes away isolation. It gives breadth and develops man, and enables him to see the great pleasures which Mrs. DeVilbiss has spoken of. There are a large number of people who feel tremendously that isolation because they haven't that training which Mrs. DeVilbiss evidently has, to get joy out of living. They are only able to count the dollars, and be sorry they do not live somewhere else. Now, knowledge contributes these

things in a man's or woman's makeup. Talk about training. I have seen on our campus men who are dressed in a somewhat abbreviated uniform, running around the campus just as tight as they could run. Why were they doing this? Who were they? They were running their very best. There were eleven of them. It looked to one looking on as if they were playing follow the leader. These men were football men. What were they doing? They were training their wind. They were simply running in order to develop that tremendous lung power which a man must have when he goes into a hard-fought battle and stays in the game and isn't knocked out in the first round when he runs up against his competitor. The man who pounds stone ought to have muscle to pound anything else. There is accumulated strength there. The man who trains his mind to do hard work by thinking out hard problems in algebra, geometry, Latin and Greek is also training his mind for other things. These things are not useless because we do not have them in everyday life. They give us a natural training for other things. How many of you are prepared to sit at a desk for three solid hours and not think of another thing except one problem, and think that problem through to a final, accurate, satisfactory conclusion in view of all the circumstances that are a part of that problem? The majority of you would go crazy if you were to try tomorrow, because most of you are not in practice. Pardon a personal reference, but I have a brother who is rooming with me. He was a freshman last year in college. I have seen that young man sit at his desk on the opposite side of mine, and work at a problem and think of nothing else from seven until eleven. And more than once I have seen him think of just one problem all this time. This he does night after night. Now then, tell me, if you will, whether the concentration and training which he gets in that close application helps him to sit there without getting fidgety and leaning back and stretching, and all these things. Tell me whether or not that training which enables him to sit there and think out those problems will not enable him to sit down and think out perplexing problems in business with a great deal more thoroughness, and more accuracy. This is why some subjects contribute so largely to the student in the agricultural college. In the agricultural school the student is getting just what he needs to know when actually farming. He has the practical application. I remember with what surprise and wonder some of our farm men looked at me when I had charge of the farm work the first summer. There were some young men who wanted to form a perfect square of a certain size for the variety show. They wanted a perfect square, for we take pleasure in having our rows straight, and having everything parallel with the fence. As a man used to say, we wanted things to look as if they had been put there, and did not happen. These young men were having a time to be certain that they had a perfect square. They were measuring from stakes, etc. I happened to remember that in geometry there was a

theorem which said that the sum of the square of two sides is equal to the square of the hypotenuse. We had to prove that in geometry. If you will take a right triangle of which the sides are three, four and five feet, or any multiple of that number, you have laid out a right triangle, and you have one corner of a four-sided parallelogram. It will have to be square as the other sides are all of the same length. When we laid out the square we took twenty, thirty and forty feet, and marked and put stakes there. Of course it came out perfectly square. This was just a little bit of an everyday application of college training to common everyday work. So then, as I think we will have to leave the illustration, our college training contributes largely to our actual work. It contributes a knowledge of fundamental principles. And this is a big thing in agriculture today. A man should understand cause and effect. If you would hang a curtain right here and put a stick through ten feet long anyone would know that if you move this end of the stick this way the other end will move the other way. Now through all the mysteries of farming there are certain underlying principles which are just as true as this little illustration. If this is so something else must be so. It requires a trained mind to know what the cause and what the effect is. You often attribute the effect to the wrong cause, and it takes a long time to find out the cause, which the college gives. Let us take an illustration from the field of which we are pleased in the text books to call Agricultural Physics. Take the soil. A Kansas man studied the soil problem as to why his crops did not get ripe, and he found that it was on account of lack of moisture, and he also believed that there was enough rain fell in the year to raise the crops if he could only save it. He studied the movement of the water through the soil and said to himself. "If I will stir the soil so much water will not evaporate." And he tried it. After three or four years he proved that he was right. He succeeded in conserving enough moisture to ripen his crops. It took him years to prove that. We can take a young man or a young woman three weeks and prove to them accurately and concisely this same principle, and prove it to them conclusively. We would take two cups of soil. Let one bake and keep the other one moist with water. Let one stand and the surface will bake. I should say that when we started this test, both cups of soil were just alike. Let one stand without breaking the surface and it will bake. Take a knife, or sharp stick, or something of the sort, and break up the latter one. It will hold more of the moisture. When you weigh these cups which weighed the same to begin with, you will find that the one with the baked surface does not weigh so much as the other one. I believe in the laboratory last winter this was tried, and it was found that one of the cans had lost one-half pound and the other one had lost two and one-half pounds. In other words the one with the baked surface had lost five times as much as the other one in a given length of time.

Did you ever try to unite a piece of lamp wick with another piece by

pinning them at the bottom? If you did not pin it very tight it would not burn very well. It would not jump over. It is just the same with the soil. The moisture could not jump over. If you keep the soil loose it will not jump over, and therefore the water will remain in the soil. This can be proven in the laboratory conclusively; just how it is, how much it is, and why it is. I might go on with other illustrations, but I will just give one more.

Why does milk sour? There is no one but knows that it does sour. We have experimented with this milk and we find that it sours because something gets into it after it leaves the cow. The milk would keep sweet just as it comes from the cow, but something gets into it—a germ gets into it—and then it sours. These germs are little forms of plant life. They change the sugar of the milk into acid and then you say that the milk is sour. The only way to keep milk from souring is to keep the germs out. Put milk down in some cold place and it will not sour. It would remain a long time before there would be enough germs there to do any harm. We have kept milk sweet twenty-one days. When milk sours one of two things must be true, and that is that it has been too warm, or that it was not kept as clean as it should have been. To keep milk sweet it must be kept clean. When the milk is kept cold the germs cannot multiply, therefore they do not change the milk.

This brings to my mind the point illustrating the application of science. One of my professors once defined science as truth. If you know the science of anything you know the truth about it. Now when we make butter in the creamery—and we make a lot of it—and when milk comes into the creamery that is not over twenty-four hours old that is sour. I know that one of two things is sure, and that is, as I have said, that it either has not been cold enough to keep the bacteria out, or it wasn't kept clean enough. Even if there are a few germs in the milk and it is set in a cold place these little germs cannot do much; they cannot grow very fast. Here is an illustration of the application of college training in commercial practice. You can carry that right onto the farm. The college furnishes the principles and you can make the application in everyday life. It also furnishes a certain amount of practice. The young man who takes work in stock breeding is able to tell the attributes of a perfect beef. He can pick out a perfect animal. We do not learn through our eyes only, but we learn through our eyes and hands; therefore this teaching is supplemented by actual practice. The boys are taken out into the showing room. The cattle are brought in there. There are a certain number of points for them to notice. For instance they give five for a perfect head; so much for a perfect neck, etc. They will soon learn to pick out the faults. They may see that he is too narrow between the eyes, and cut him a point on that. Little by little they are schooled in these regards until they are able to go out and pick out a perfect animal. When a number of cattle are being judged our boys can put the first three right

where the judges will put them. They are thrown in contact with some of the most expert stockmen that we have in the State, and when there are fifty or seventy-five to be judged, our boys will place the first three in their order—in the order that any good judge would put them. They do this because they have not only the theory but the practice. So there is practice in stock judging, corn judging, butter making, etc. All the way along we link theory with practice.

The next point I wish to emphasize is college training. This adds to the power of judgment in life, and I think we live for these things. First, to provide the necessities of life; and second, to prepare ourselves for the hereafter. So the college training adds something to the dollar and cent side, and also to the power of enjoyment in life, and gives us a better understanding of the hereafter, and a better understanding of nature. I would not dare tell you how old I was before I knew that there were any other birds besides robins and crows. My father and mother did not have the instinct of teachers, to teach and say things about the birds. And yet, as I have ridden out through the country with a friend of mine who is well versed in such things, I have often thought to myself, that he gets more genuine pleasure out of his knowledge of birds than I can express.

I do not know much about pictures. I went to the Chicago World's Fair, and you will remember that there was a tremendous big building devoted to pictures. I walked through every room of that building in less than two hours. I was doing the Art Department. But just as I was going to leave one of the rooms I heard a crowd of people commenting on one of the pictures. I thought that here was my chance to learn something, so I stopped and again looked at this picture. They commented on the lines of expression on that boy's face as he was going away from home, and the look of sorrow on the face of the mother. To me it was just like wiping the dust off of that picture. I learned more in that five minutes about pictures than I have ever learned before or since. And pictures have had a new meaning to me ever since.

There is another phase in this college work. No one can go to a college and mix up with the teachers and the boys and girls without rubbing off just a little of some of the rough corners that stick out. It will polish you up. It enables one to meet friends with more satisfaction. It does more than that. It gives a host of friends for lifetime. The best friends that most of us make are made during the time we are in college. I see in the audience tonight men who have been to college. Ask them tonight if some of the friends that they are so anxious about, and inquire about, are not college friends. There is a training given here that enables us to grapple with the problems and understand the principles so that we save our strength and not waste it. Then we have a certain amount of practice that clinches it, and makes us broader men, and gives us more of an interest in our life work. Here is an illustration. A young woman came

to our college. She wanted to go to school because she wanted to get away from the farm. As I said, she came to our college and got interested in the dairy work. That was one thing that she could do. She went home and told her father that she would take care of the milk and butter. She did so, and is now selling it in Indianapolis. She is getting more pleasure than many a girl that is working in the factory. Of course she has to be there on Sunday, but you can't get anything for nothing. She has good health, and is more independent, and is making more money than lots of girls that are working on salaries.

A young man came to our college to get away from home. He went home to make one of the best farmers in the country. So college training does do these things. Of course we can't accomplish much if we do not have much to work with. It is not every colt that is trained, and bandaged, and fed and slept with that makes the two minute horse. If it is not in the colt you can't get it out. But there isn't a poor old pelter, no matter how stiff and poor, but what if he is bandaged and cared for and slept with will not go a little faster if he doesn't fall down and kill himself. Occasionally one surprises himself at college. The college training is but the commencement to the end. It is not the end. Do not think because a man has been to college he knows all there is to know. There may be a little more in him, but not as much as there ought to be. If a college training isn't worth getting it is not worth having. If you have it is nice to send them. But I do not think it is always wise to do that. A son or daughter that wants a college education and you can afford it. Most anyone can get an education by the time they are thirty-eight or nine years old. I have been through the mill. Many of you have. If a college education is worth having it is worth getting yourself. Earn a little today when you are idle, and save it for after awhile when you may need it worse. When you want a young man to go to agricultural college you must show him the big side of it, the beauties of it. Tell him something that he doesn't know. Show him how to raise live stock and breed cattle, and how to raise corn. Why do they go to college? To get something into their heads instead of their hands. They will then have a greater interest in the farm.

Mrs. DeVilbiss: One of the strong arguments against the agricultural school is this: If we have a bright boy that we have taught to be a practical farmer upon the farm, and we send him to agricultural college to get an education, we never get him back on the farm. I would like to know what per cent. of the college students that take the four years' course go back to the farm?

Prof. Van Norman: In Indiana I can't give you the exact figures, but we have a very large proportion that go back to the farm. Most of the boys that come, own farms of their own, or are going back to work on their father's farm. I think there were only two men out of nine that

graduated last year that did not go back to the farm. One left because he hadn't any farm; and of course didn't have anything to go back to, and so worked for some one, intending to save enough money to get himself a farm. The other one said that he was not needed at home, so he would not settle down immediately, but would travel for a year or two. And out of our short course, it is safe to say that ninety-five per cent. of the men return to the farms. Last year out of a class of eighty we couldn't find five men that wanted a salaried position. In Michigan a great many of the boys left the farms. We have established fifty-nine colleges inside thirty years, and these have to have teachers trained in agricultural schools. Where will you get them if you don't take the men from the farm with a college training? The city man will not do. Is it any disgrace that the man who has this training chooses to take a salaried position instead of coming back to the farm? Perhaps he can make more money out of the position than he could under conditions at home. The records of all agricultural colleges show that a large proportion of the students go into strictly agricultural pursuits. There is no education today that is so broad no matter whether a person intends to be a farmer, a doctor, a lawyer, or an engineer. President Thompson, of the University of Ohio, says that he would advise any person to take an agricultural course no matter what profession he expects to enter, because of the broad foundation given.

The cream of the farm has been leaving it, because the fathers and mothers are running down the farm. They don't see anything in it themselves. They have not seen any of the largeness of the farm, and they need not be surprised when the boys want to leave it to broaden their horizon. Two years ago there were six colleges looking for teachers, and this is pretty tempting when a boy can't get along with his father. These conditions tend to drive boys into the salaried positions. I will go back to my former statement. A large per cent. of the boys go back to the farms. I expect that Mr. Latta has had twelve or fifteen calls for men within the last six months, and we have not had three men to send. Why? Because they had farms at home and preferred to go there.

Prof. Latta: Out of the senior class of nine men every one went back on the farm except two of the boys, and they did not have farms to go back to, so they worked for other men.

A Delegate: Why is it that the colleges ask only for farmers' boys to attend these colleges? Take the medical schools. They do not ask for just sons of doctors, but they ask for any one. Why don't the other colleges try to get other boys?

Prof. Van Norman: The facts in the case are these. The colleges make no distinction. They cater to the farmer, because they expect to find among one thousand farmers more boys for their colleges than from

any other class of men. They do ask for other boys, and I hardly think it right to say that the agricultural colleges ask only for the farmers' sons. We had one boy that came with his father who was in a profession to ask about the school. He asked me what the opportunities were. I told him and they were satisfied. He went to work with a will. I tell you it is surprising because more people do not see the opportunities.

Prof. Hedrick: In answer to the previous question why the boys do not return to the farms. Dr. Benton took occasion to look up the statistics in this regard, in regard to men in different lines. In the University of Michigan he found a large per cent. of our students returned to the farms—a larger per cent. than the percentage of lawyers that were educated in the law course. More boys go back to the farms than doctors remain in practice after they have been educated along this line.

Mrs. DeVilbiss: I would like to ask a question. In taking a boy who has eight years in the common school, four years in the high school, and four in the agricultural school—in each year for nine or ten months—now doesn't that unfit him for the life on the farm? Isn't that too much mental training for his physical training? Don't you think our children on the farm would get more out of six months' training under these conditions than out of eight or ten?

Prof. Van Norman: Well my answer to that is, when we have enough of these people whom you are willing to spare from the farm to furnish enough teachers in the schools, the schools will be so taught as to show the boys and girls the large side of the farm, and during their vacation they will take home an interest, and will see the farm side of things, instead of running down and complaining of the work. At that time we will have such teachers in the high schools, but we can not have such conditions until we have enough teachers. We can't have these conditions in less than ten years, for it will take ten years to prepare the men. If you think that the boys are getting too much schooling send them up to the University to take the short course. I want to give you an illustration. A young man said to me in Chicago. "Did you see the Berkshire that won the prize?" Now this boy had picked the hog that won the prize, and he told me that he would never have picked that one except for the training he had got at our college. The things he learned there enabled him to pick out the prize winning sow in that show. You all know what this show is. It is the greatest stock show, greatest fat stock show in the world.

Mr. Flick: Do the farmers' girls attend school, and if so, how many go back to the farm?

Prof. Van Norman: I might say that the best student I ever had was a girl. She could do her work better, she mastered the theory, and got the practice better than any man I ever had in a class, and she went back to the farm. She made only one mistake according to my mind, and that was that she didn't marry the best farmer in the class. (Laughter.) I wasn't in the same class.

Mr. Flick: Do the colleges offer any course to girls?

Prof. Van Norman: They offer the same course as to the men. Let me be plain. The Hoosier girls are not quite awake to their opportunities. Only yesterday a girl from New York wrote me that she was coming to take a course in our college, as she was preparing to take charge of the farm that had come to her recently. She comes not on account of the recommendation of a farmer, but upon the recommendation of a college president, who is her uncle. The girls are taught on the same plane as the boys.

Mrs. DeVilbiss: They are offering the dollars to the girls the same as to the boys.

Prof. Latta: The next speaker comes from one of our colleges in a sister state, and when I was there I was proud of it, and said it was the best, but since I am not connected with it now, but connected with another, I am only willing to concede that it is one of the best. Prof. U. P. Hedrick, of the Agricultural College of Michigan, will now speak to you on "Opportunities for Those Who are Specially Trained."

Prof. U. P. Hedrick: Mr. Chairman, Ladies and Gentlemen.—In order that I might give you the facts in the most concise manner possible, I have written them, so I will read my address.

OPPORTUNITIES FOR THOSE WHO ARE SPECIALLY TRAINED.

What are the opportunities for trained men in agriculture? Is the future for such men full or devoid of hope. We all grant that men must be trained for any business or any industry and our question, therefore, should take a turn. We must ask as to the future of agriculture. Is it dead, or at a standstill? Or is it alive, progressive and inspiring? These questions are of prime interest for you and me, for we want to know what is in the future for the occupation in which we have cast our lives.

We are making progress in agriculture. A most wonderful progress. But the mere fact of progress is of little importance unless we can get at the reasons for it and so be enabled to add to the progression. May we not advantageously take stock of our improvements in recent years:

then seek for the reasons for their coming; then determine what special training has done for agriculture in the nearby past and what it may do for the occupation and for the man in it in the future.

If in taking account of our many improvements in agriculture we group together and classify, we shall find—

First. That in recent years, agriculture, the cultivation of the soil, has become divided into several special industries. A quarter of a century ago fruit growing, truck farming, dairying, and animal husbandry as special industries did not exist. All were combined under the general head of farming. It is not too much to say that the division has completely revolutionized agriculture, and to its great betterment. Preparation of land, tillage, fertilizing the soil, the handling of breeds of animals and varieties of plants, all are better done now under specialization than formerly.

Second. We shall name as the second most important development of agriculture the great improvement of agricultural implements and the invention of many, many labor-saving devices. Nor need I stop to enumerate to any intelligent audience the innumerable devices and machines that have come to lighten and lessen the labor of the farm. An old writer, who wrote from the farm, exclaims in a burst of enthusiasm: "Blessed be agriculture!" and then adds, with thoughts of the spade, the hoe, the fork, the rake, the scythe, and the sickle, "if one does not have too much of it." Hand tools are now nearly all gone. Machines take their places. We are not now likely to get the old man's "too much of it."

Third. We grow many new types of plants and have many new breeds of animals. I can not discuss them all, but since my work is horticulture permit me to speak briefly of the new types of fruit. Within the memory of middle-aged men, the culture of the raspberry, blackberry, dewberry, gooseberry, and cranberry has come into existence. From one or two sorts of grapes and native pulms half a century ago, we have advanced to as many hundred sorts. So much from the wild fruits of the woods in a half century! What may we expect in the future from others now coming into cultivation? Many foreign plants and fruits have come to us in recent years. Russia, China, and Japan have contributed most. Many of these have proved good in themselves, but their numerous and variable progeny, better adapted to our conditions, promise still greater rewards.

Fourth. There has been a great increase in the number of varieties of our cultivated plants. So great is the number of new sorts that we may say that our fruits, farm crops and vegetables are not those of our fathers. Old people love to tell us that the new products are no better than those of their day. But surely it may be said that they are good, that they serve new and more demands, that they have widened the field of agriculture, and that, in general, the tendency is toward betterment, and that is the main thing.

Fifth. Great progress has been made in the extension of agricultural regions. Corn and all tender plants grow farther north than formerly. Pear culture has become profitable in the south by reason of the Kieffer pear and its related sorts. Munson's grapes have extended grape culture. Peaches are more widely grown than formerly. These, and the extension in the animal industries are so obvious, that the subject needs no further application.

Sixth. Spraying and the treatment of plant diseases have completely revolutionized some phases of agriculture in our day. The potato bug, chinch bug, Hessian fly, the scale insects and other pests threatened the very existence of some crops. We now successfully check all. There is certainty and assurance now where before was chance and luck. We no longer fear the insidious and often invisible foes that once threatened our industry, and the knowledge and power came at a time when there was fear and dismay to inspire hope and to give courage.

Seventh. We are making great progress in the handling and in the marketing of agricultural produce. This is especially true in such industries as dairying, poultry raising, fruit growing and truck gardening—industries having to do with perishable products. In olden days all such products went to market in bulk, poorly packed, unattractive, and unfit for long transportation. Now there are special package industries. Quick transportation has brought together the oceans, and, aided by refrigeration, has united the continents. We now have countries for markets where formerly we had counties.

Eighth. The rise of cold storage, canning, preserving, and evaporating establishments makes a market for products that not long since must have gone to waste. In seasons of overproduction, the sales of products prepared by some of the above establishments means profit where otherwise there would have been loss. It would be difficult to say whether the direct products of plant growth or the products of animal life has been most benefited by these new economic uses of agricultural produce. In this connection, special attention should be called to the enormous increase in the kinds and quantities of cereal foods.

Ninth. As the new economic uses just mentioned came into being, new breeds of animals and new varieties of plants spring into existence to serve the new wants. The sciences of animal and of plant breeding have given us products of such a diversity of uses that we are led to expect that all possible wants may be met by new varieties in like manner. No other phase of agriculture gives greater promise to the trained agriculturist than the breeding of plants, and the breeding of animals.

Tenth. The up-to-date agriculturist now studies economics. There has always been too great a margin between the amount received by the producer and the amount paid by the consumer. Organization, market and crop reports, storage and quick transportation facilities have substantially and permanently reduced this margin. The agriculturists have

learned well, too, the law of cost of production. They know well that the locality having advantages of soil, climate, transportation and labor over another locality or county can drive the latter out of the markets, and, that for example, it would be folly for a man to grow peaches in Indiana when that fruit can be produced cheaper in Michigan, or corn in Michigan that can be grown, for most part, cheaper in Indiana or Illinois.

Eleventh. And lastly, I may say that many old methods have fallen out of use; and still other improved ones than those above named have become established; and that many, many others are in the process of abandonment or of adoption.

What is the explanation of these mighty changes? How comes it that the giant that tills the soil is thus awakening? Formerly a matter of digging and delving in monotonous routine in connection with farm work and in accordance with rules handed down from generation to generation, agriculture and its several branches are now rounding into resourceful, stable industries founded on businesslike systems and on scientific principles.

Is it not true that a half century ago the tiller of the soil availed himself but little of the advantages of science and of education? There were few or no specially trained agriculturists. And is it not true that at the present time and coincident with the progress in agriculture which I have so briefly sketched, men in all departments of agriculture have seized every advantage to develop their facilities; in short, that the farmer has become conscious of the meaning and value of education? If we contrast our present agriculture with that of a half century ago, shall we not say that the difference is mainly due to the greater influence of science now than then? Brain takes the place of brawn. And when we see how, daily, competition is making the adoption of scientific methods more general than necessary, we shall rightly infer that success in agriculture soon will be impossible without a competent knowledge of the sciences having to do with the industry and without special training in the arts of agriculture.

With this brief glimpse of the achievements of the trained agriculturists in recent years, let us glance for a moment at the means of training now at the command of the farmer and which half a century ago did not exist—means, I believe, which have, in large measure, brought about the marvelous growth which we have been discussing.

At a meeting of the American Pomological Society held just after the war, it was a matter of pride and of rejoicing that there were over a dozen horticultural societies in the Union. Now there are nearly that many national societies in prosperous existence, devoted to horticultural interests alone, nearly a hundred to represent states and geographical districts, while local organizations run well up toward a thousand. I take it that societies have multiplied and thrived in all the special industries of agriculture just as they have in horticulture.

Within a half century fifty or more agricultural colleges and nearly as many experiment stations have been founded and the sentiment among farmers has changed from sneering derision and half-hearted toleration to hearty and loyal support. Within the same length of time, the United States Department of Agriculture has risen from a Bureau for the distribution of congressional favors to a mighty power for good in agricultural work.

More agricultural books have been written in the past decade—good ones, too—than in any century preceding. Agricultural papers have increased enormously in numbers and in usefulness.

The farmers' institute is still an infant—scarcely in its teens—but it is a goodly child, and, fed by popular sentiment, is growing and is now a tower of strength to agriculture.

I can but mention other forces, as the Grange, Farmers' Clubs, Home Reading Courses, University Extension Work, and Nature Study. Nearly all of these are of recent growth and all have been a means of training and of education to the farmer.

I thus set before you the facts as to what training has done in the immediate past as the best means of illustrating what the opportunities are for those who are now thinking of training themselves for agriculture. I want also to hush up any statement or any thought "that education for the farmer is all bosh," as we sometimes hear from those who have mighty little or none of it. And now, with your minds filled with the achievements and facts of education and training, I want to briefly discuss the methods and needs of agricultural training.

Scarcely any two men agree as to how the farmer's son or the farmer himself should be educated. If we suppose that the training is to be given at an agricultural college, one man says that such a school should teach practical agriculture—how to plow, till, prune, milk, bind, and mow—to earn one's bread by the sweat of the brow. A second wants a school of science to teach botany, chemistry and the like. One wants the school to support itself. Another insists that it should not compete with the farmer in selling produce and should therefore be endowed. A third wants an experimental farm and a fourth says the model farm is the thing.

The divergencies arise, in the main, however, from two points of view, namely as to whether the advocate favors the science the most or gives his preference to the art of farming. We come now to a discussion of these two issues.

The difference between erudition, that is, mere book learning, and true education, is nowhere better illustrated than in the study of agriculture. "Erudition," says Herbert Spencer, "is knowledge gained from books. Education is erudition put in action—is knowledge plus practice." Now the student of agriculture, in college or out, should seek not alone the

knowledge in the books, and not alone practice in the field, but both. Head and hands must be developed together. Only when practice is thus joined to the science can the highest results be attained.

What can the farmer get from books? What should science teach him? Not facts alone, for in themselves they are worth but little. We memorize them and then forget them. Moreover, we tire of them and facts awaken in us no interest nor enthusiasm, and they often create dislike where should be delight and pleasure. No, science and the books should give us principles and we should then learn how to apply them. We should learn why we till; why we prune; how plants feed; the laws of plant and animal breeding; the influence of climate, of environment, the evolution of plants and animals. Give dignity and respect to agriculture by making it a science. Let the scientific spirit permeate our occupation.

Such training in agriculture should make a man more of a man; should deepen and broaden his intellect; should open his eyes; should enkindle enthusiasm; should teach habits of thought, of observation and investigation; it should give him greater mental stature, for the mind, like the body, grows with exercise. It should make him more accurate in his judgment, more cautious in generalization, more self-reliant, and more alert and fruitful in his investigations.

Coming to agriculture as an art, we find that many take the wrong view. They consider the best training in agriculture to be apprentice work. Now, apprenticeship, so the great teacher tells us, does not truly educate a man. The master says, "do so and so; the rule is such and such; beveve and ask no questions." This begets an attitude of submission to dogmatic teaching. It puts rule, authority, and personal experience ahead of inquiry, reason and science. The apprentice is not often a student, and he is apt to be narrow, opinionated, selfish, unprogressive and to lack self-reliance. The apprentice seldom learns how to use time well. He works his ten hours; after supper he lights his pipe and goes to town. He throws away golden hours that the true student would spend with books and plants.

No, the training in agriculture should not be that which the apprentice gets. It should be such that mind and hand are trained. It is well said that "The man who relies solely on his hands is a beast of burden." We should expect that the apprentice could set more grafts, plow more acres, cut more grain, and turn a straighter furrow, but we should want a well trained man to manage a farm. No, mere skill with the hands is not the great thing in agricultural education. It is of far less importance than inspiration, interest, enthusiasm and the will to work.

I have not yet specifically mentioned the opportunities for men trained for agricultural work. Now, shall I do so? Opportunities innumerable lie along the lines in which we are now making progress, and which we have discussed somewhat. Agriculture is growing through the work

of trained men. It is impossible to state where and when an opportunity may be seized. It is beyond the power of man to tell what proportion agriculture is to assume in the future, or in what direction it is to develop most. We are safe, it seems to me, in saying that the impetus to agriculture we are now feeling is but the beginning and that the next fifty years will show even greater changes than we have seen in the past half century.

Possibly it may be well to point out some of the phases of agricultural work which seems prominent and promising at the present time for those who seek an active and earnest career in agriculture. I do not wish to unduly emphasize the horticultural possibilities in agriculture, but I know you will pardon my calling special attention to the commanding and growing importance of fruit growing, truck farming, floriculture, and landscape gardening. One needs only to compare the last available statistics of these industries with those of any previous period to realize the growth being made and the opportunities they offer. It is the same, I know, with dairying, animal husbandry, poultry raising, and general farming. For those lacking capital to start a business of their own, and inclining toward the professions in agriculture, if we may so call them, the agricultural colleges, the experiment stations, the United States Department of Agriculture, and the agricultural press are all seeking trained men. Those of us having to do with these phases of agriculture know that the supply is nowhere equal to the demand. I know now of seven vacant college and station positions in horticulture, and three places in the United States Department of Agriculture, paying from \$600 to \$1,800 per annum, and it is doubtful if men of the right quality can be found to fill them. The lack is not in opportunities, but in men well enough trained to take advantage of existing opportunities.

Will it pay to train oneself for a career in agriculture? Will selling merchandise pay? Will preaching pay? You answer at once that it depends on the man. And so with the man with special training in agriculture. A man with the three I's, intelligence, industry and interest, will find that it pays to train himself in agriculture. The man without these, and with but little of the art of agriculture and but a smattering of the science, can hardly make it pay. Above all, a lazy man, or the man who thinks his training is the "whole thing," can not make it pay. To succeed, the trained man must be a worker. He must remember that always "the weakest goes to the wall," and that, as in other industries, one "must fish, cut bait, or get ashore." Again, he must be in earnest, and must be in love with his work.

"No profit grows where no pleasure is ta'en,"

And "the labor we delight in physics pain."

The trained men with these qualifications can more than make agriculture pay.

But there is more than money in the career of the trained agriculturist. There is, or should be, much pleasure in it. I can not conceive of a more pleasant vocation, for instance, than that of the plant breeder. He turns sour and bitter fruits into sweet; he makes hard fruits soft; he changes the natural green of the wild fruit to crimson and gold; he makes two plants grow in the field where one grew before; he takes the thorns from the rose and the berry bushes; he doubles the pink, increases the fragrance of the violet, and adds color to the daffodil. Moreover, he is a true benefactor, for with his magic he brings forth new types and new varieties and gives to the laborer of these days comforts which a king could not have purchased a century ago. The men who make silks and paint pictures put their wares in the palaces and cathedrals. Few there be that see them. The man who creates new fruits and flowers, calls to the weary throng, "Whosoever will may come," to be refreshed and cheered.

Then, too, there is much for the moral life in agriculture. More than in any other industry a man puts his mind and soul into his handiwork, and materializes them into plants and fruits and flowers. Growing things give a charm to the home and keep a man there. They fill one with gladness and there is small place in the wholesome life of the farmer for the devil to hatch his evil brood of anarchy, thievery, jobbery and meanness. The Almighty made the first man perfect, and set him to tend the garden. After Adam had consorted with Eve and the serpent, and had sinned and fallen, he quit our profession and turned builder. Growing plants bring us in touch with goodness and beauty and set our thoughts in accord with true and noble things.

In closing, I want to say just a word in regard to our agricultural colleges. I shall not say much or go into details, for I realize that for most of you, college days are past. Neither do I want to seem to disparage other means of agricultural training by dwelling on college courses. I only want to say that our agricultural colleges stand for the improvement of agriculture, and the making of men through education. The Michigan Agricultural College, and your own institution, I am sure, name with pride trained agriculturists who have attained distinction in the State or Nation. Out of the right stuff the agricultural colleges can make the best of agriculturists. They can make men, too. Manhood first, livelihood second.

(Applause.)

Prof. Latta: We are now ready for any questions that you may wish to ask.

Mrs. Meredith: I would like to say a word in regard to how special training touches so many phases of life in town. A young man in Chicago who has charge of the boys sent from the Works—they are taken away from their home—is helping them in their work, and is having

them work with plants, digging the ground, etc. That young man is a good Christian young man, but the training that he had in an agricultural college, in the horticultural department, is the thing that gives him the power to influence the boys. I want to say here also that a number of reformatories for women are finding that if they want to do the bad women any good they must get them out of doors away from the prison walls, out in the fields, and they are taking them out in the fields and letting them dig with their hands. There have been calls again for women to take charge of such as these. So you can see how this education touches all phases of life and is a refining principle. That is an important thing.

I want to speak of securing positions. I know a number of places where women with training can take positions as supervisors. These positions are open for trained men and women.

Mr. Williams: I would like to ask one question. I would like to know what the direct influence of the agricultural colleges are upon the general agriculture of the country, both directly and through agricultural papers or bulletins. How much benefit are we deriving from them when we are not directly connected with colleges?

Prof. Hedrick: This is a hard question to answer. It is my opinion that the agricultural colleges have been the chief factor for the last fifty years in the wonderful progress that agriculture has made. That is about as near as I can answer the question. Think of the books that have been written, experiments that have been carried on and the work that has been done in the departments of agriculture—all along progressive lines—and it has been done by men educated in agricultural colleges. I think you will say that my statement is not too broad. I believe the work done by the agricultural colleges is the strongest force that is moving agriculture forward at the present time. There are many things that I might mention here, but time will not permit.

Mr. Williams: To what extent are these agricultural teachings permeating the country?

Prof. Hedrick: I am sure agricultural education is finding lodgment in every nook and corner of the land. In one way or another it reaches almost every farmer in the land, if not every farmer.

Prof. Van Norman: I want to say another word on this question. Of course we always discuss the father's place and the boys' and girls' place, and that is the way with you people. I want to say this, leaving out for the moment the experiment station side of it. There was a young man graduated in the college just before I did, and he went back to the farm. He came back to the college one day and the professors asked him how he was getting along. He said that he was getting along

all right, but that since he had been to college all the neighbors asked what they should do about things. They consulted him about everything. This was pretty big for a young man of twenty-one. This simply goes to show how much the community expects of a young man who has had the opportunity to finish in an agricultural school. Not long since I learned that he was now a member of the Legislature.

Right in our own State a young man from our college cured thirty-two cases of milk fever among milch cows. This is one of the most dreaded diseases. It took training and common sense to do things of this kind. Look at all of the experiments and tests that have been worked out. They are one of the commercial results of education in agricultural schools. I know a man that went on a farm at a salary of four thousand dollars. He increased the value of the productions on the farm the first year over seven thousand dollars. Of course it was a large farm. And he was a man of large ability. It was simply his college training that put him into this.

Mrs. Meredith spoke of the folks that were leaving the farm. Look at men like Joe Burton who has apples and pears when other men fail. He sprays. He uses his head along with his hands. Look at Morrell, the peach man. He carefully cultivated the ground, took every weed out, cut every branch, so when the frosts came a few years ago and the peach crop was ruined, he had a good crop. Why? Because he had thoroughly studied the matter. He did not have an extra branch to be supported, or a twig to take the nourishment and the vitality, and it had enough vitality to stand what the others couldn't. Look at the men who take the cattle to Chicago. There are thousands of men feeding steers over the country, but they do not turn out such steers as Carrick does. Take the cream at my own dairy. I have used cream seven days old. This was because we understood how to handle the milk. We averaged more than twice what the usual average is. Take the boys and girls that want to teach in the district schools. I will go tomorrow to a teachers' institute and deliver a lecture on "The Country School and its Relation to Farm Life." Suppose that superintendent turns around and says: "We want a young man like that for our high school. Where can we get one?" I could not tell him where. One of our teachers was asked the same question last week. We have the apparatus. What we want is the men and women. Such people as these are needed anywhere on the farm.

Prof. Latta: We do not want to hear any more from our college people until we have heard from the others.

Mr. DeVilbiss: I never went to college an hour in my life. But I want to say that I see the benefits of a college education. Mr. Van Deman has told us how we learn so much. I come to the Farmers' Institutes to learn something, and then go home and practice it. We have sixty

thousand people in Allen County, and sometimes we have only sixty in some of these meetings. Do we get any benefit? Certainly. Twenty years ago we raised twenty bushels of corn. Now we average forty. What is the cause? Agricultural education. By what? People going to agricultural institutes, hear what the different men have to say, go home and try it, and the man who doesn't go to the institute looks over the fence and copies how it is done. This is like bread cast upon the water. It will return in large quantities.

Prof. Van Deman: It is certainly a fact that is being recognized all over the country, that the man who tills the soil has one of the most elevated callings in the world. I think it is the most elevated calling. And should we go into a life work like this without training, without a special education, and a special preparation? It is unreasonable to think of such a thing. I had to get what I know by digging it right out of the soil, and getting what I could out of books. We are glad you are working on this great subject of getting the best results out of the country life. Certainly we have a wonderful problem.

Now I remember two cases that are in point in this general discussion with regard to the knowledge which one will have by having an agricultural education. When I was teaching in Kansas, in the agricultural college there in the 70's there was a certain young man in the class, we had thirty-five young men and women in the same class. There was one young man whose aim was to be a lawyer, and after three or four days he came to me after the close of the day and said, "Professor, I wish you would excuse me from taking those lectures in practical horticulture. You know I wish to be a lawyer." I told him that I knew that. He went on and said, "I feel that I am wasting my time and that I do not need these lectures." I said to him, "Mr. Wood, don't you expect to have a home some day when you are through college, and are a lawyer living in town?" He said, "Yes, I am very likely to." I said, "If you are going to have a home you want to know how to beautify that home, and to take care of it, and you need this training." Well that was a new thought to him, and so I told him to come back in a week and talk to me. In two or three days he was back in the classroom, and he told me that he didn't have any more to say.

There was a young lady in the class taking a course, in fact there were quite a number of young ladies in that class, and among other things we were taking grafting. They took it along with the rest of the class. Several years after this at one of our institutes I met one of these young ladies and she said to me, "I suppose you never thought I would ever make any use of that grafting, but I have and I would not have missed it for anything." They thought this practical information had been of great benefit to them. Of course grafting was only one of the many things that were taught during the term.

I certainly think it is a very proper thing for everyone to have a good, thorough training at some agricultural college.

Mr. Widney: I would like to add one word in regard to the practical part of the bulletins that are sent out from the station. It was my misfortune not to have the opportunity to go to college, and to get a college education, but I consider that from these bulletins I have had an opportunity which is about equal to that given by a correspondence school. From these I have gained a great deal. There are several modes of education, and one is practical experience. I would like to say to those who are starting out in the horticultural world, that to me practical experience has been the most expensive thing I have ever had. I would also say to anyone who is considering going into this line, by all means commence at some agricultural college, and get the benefit of the experience of others.

There is one thing I wish to say about Mr. Morrell's peach orchard. Some of my friends are here. I started out in the fruit culture on that line. I believe if there was any man proud I was over my orchard five or six years ago. I hoed it once a week regularly as clockwork. Along came a hard winter. I had gone to the extreme. My next experience was digging out those plum trees and throwing them over back of the barn. This was extreme cultivation carried to an extreme. We admit we went too far. We cultivated them to the very best of our ability, and so I advise anyone who is thinking of doing this class of work, to go to school. I would have been dollars ahead if I had shut up and quit business and gone to an agricultural school.

Mr. Van Norman: A man in doing this class of work must have all the conditions right. This man had the other training that went with it. There are so many of these conditions that must be handled together it takes such a big head to get them all right at the same time.

Prof. Latta: We have a great many young men and women in our college but we can't prepare them fast enough to meet the demand that will grow rapidly in the near future. Mark it if it does not fall true.

Now I thought it best not to diverge from the main line to answer Mr. Stanley's question, but we will come to his question when we are talking of strawberries tomorrow. Tomorrow morning we will give the entire session to the strawberry unless we finish it in less time. The afternoon will be devoted to the apple. Please bear this in mind, as they are practical subjects by practical men of intensely practical means.

WEDNESDAY MORNING SESSION.

Prof. Latta: The hour has come for calling this meeting together. I will ask Mr. Talbert, of Albion, to lead us in the invocation. The audience will please stand during the prayer.

Rev. Talbert: Our dear Heavenly Father, we come before thy presence this morning to invoke thy blessing upon us. We thank thee for those present here this morning, and for the meeting that has been in progress here, and we pray that thy blessings may rest upon us. We are conscious that we need thy help, for we have learned that every good and perfect gift cometh from above, and is from the Father of Life. We pray thee that thou wilt give us wisdom in the work that is before us, that we may better our conditions and the conditions of mankind in general. Bless the officers of this meeting, and those who have it under their direction. We pray that the influence may go out over the entire State of Indiana, that the influence of this meeting may be carried from one side of the State to the other, and that an interest may be awakened all over this great State of Indiana along the lines of agriculture and horticulture. We pray that thy blessings may rest upon the meeting, upon the speakers, and upon this entire town and vicinity. God grant that thy blessings may rest upon all of us. All this we ask, for Christ's sake. Amen.

Prof. Latta: It is not very inspiring for a speaker to address a handful of people, but I want to remind the speakers who are on duty this morning, and especially the one who is to open, that we are reminded of the words of the bible: "Ye are the salt of the earth; ye are the light of the world." And it is a common expression of mine at our institutes when we gather there with a handful of people and there ought to be one or two hundred, or more, I simply say, "Friends, here is the salt of the earth, so we will begin." We must not feel discouraged over such things, although we can not help feeling disappointed that there are so many not here that might be here to their own profit, and to our mutual good. So I would have the speaker remember that he is talking to the leaders, who will think, and apply reasons. Take courage; be of good cheer. I learned years ago in this institute work not to be discouraged. I am often disappointed, but not discouraged, because if one will permit it, it is easy to find occasion for discouragement, and to sit down and say, "I will not try any longer." This is a good work, and we are co-operating with the farmer, and good will come from every good work and every good word. You may rest as sure of it as that the sun is shining. We must have faith in the ultimate outcome of our work.

We will take so much of the morning as may be necessary for the discussion of the strawberry, and after we have disposed of that subject

we will perhaps have a medley of subjects which will be of interest to the practical fruit grower, toward the close of this session. The first subject this morning is "The Methods of Planting and Culture," by Mr. Grossman, a practical fruit grower, whom most of you know. Please remember that we have an opportunity for an informal discussion, so please follow closely so that you may contribute your mite of experience when he is through.

J. C. Grossman: Mr. Chairman.—Rather than being embarrassed I am congratulating myself that there is not a larger crowd here than there is, for I was placed on this program against my express wish. I have been called upon so many times to speak before the same audience that almost everyone has heard me over and over again. I can't tell anything very new, but nevertheless I will occupy a portion of the time, but not the twenty minutes allotted to me. It will not take me that long to tell what I have to say.

Mr. Van Deman told you yesterday that the strawberry could be grown on any of the cultivated soils in the United States, and I believe that this is true. There is not a place in the United States where a crop can not be cultivated and grown but where the strawberry can be grown, more or less successfully. That success will depend to a great extent upon the man, the individual, and his methods of caring for his strawberries. Now before taking up the methods of planting and culture, the first thing we want to think about is the soil, and the preparation of the soil. I always endeavor, and I would endeavor if I had a large farm, to select a soil that could be easily worked and easily kept in good culture, and rich. There is quite a difference in soils. I have been accustomed to working in a sandy loam, and never have worked in a clay soil, so I would not understand it. A gentleman here has it, and he no doubt will take up the discussion of this and tell us about his methods.

I have the land well fertilized, put on a heavy coat of manure in the fall, possibly before the ground freezes. This soil or land should be cultivated years previous to this planting. I prefer to have some green crop on the land, in the fall, and cover it with manure. This makes it easy to cultivate and makes it fertile. I plow deep, but not deep enough to turn up a heavy coat of subsoil, but down to that, and it has also been my custom to cultivate thoroughly before planting. I drag the ground, and then harrow it, lapping one-half. I harrow it five or six times, or eight if necessary. I get the ground thoroughly fine and compact, and usually leave it stand two or three days, and possibly a week on account of the moisture. The ground was unusually dry this spring and we could not get to work early on account of the late spring. I worked in the field until the first of June, but I was careful to get the ground thoroughly fine, and compact. There was not a clod to be found. Under these conditions I can control the weeds. There is not a weed to be found in the patch at the present time, and I have not done any culti-

vating except yesterday for three or four weeks, and I could carry in my hand all there was in the patch. I prefer long, straight rows, therefore we make them long and straight, so we can hoe them, and we make the rows the same distance apart so that we will not have to change the cultivator in turning into the next row. And if you have an awkward horse he will not step on so many plants. Therefore I am careful in that respect.

I do not plant strawberries on a large scale, so my methods will not answer for the person that wishes to plant on a large scale. That would not do if you were rushed. My methods could not be used if you were planting five or six acres. You would have to use quicker methods than I do. I mark out a line perfectly true, and have a wedge-shaped spade made for the purpose. This leaves a wedge-shaped hole that is narrow at the bottom, and does not leave any air space. I am careful to spread the roots out fan shape, and not leave an air space at the bottom. Of course it takes longer than some take in setting plants, but I haven't the ground to plant very extensively, and I have time to get all my plants planted very carefully and easily, so I use this method. My average is usually about one acre, and sometimes one-half acre. But I have the satisfaction of knowing after the plants are set, that I will have a stand, and a good stand if the plants are in good condition when I set them out. I aim to have the plants fresh, if possible, and take one plant at a time, and put it in, and put in the dry dirt, and this fresh dirt when watered will lay up against the roots, and make it compact around the roots, and I have no trouble in having plants to live. I put about a quart of water about each plant. If I have the soil soaked thoroughly and dry upon the surface, I do not care for a dry season. My plants will stand it all right.

Of course there are other methods of setting plants. There is one method that is possibly better, but I have not tried it. It sounds very reasonable. That is of using the method that Mr. Kellogg recommends. He has a "litter." It is a cone-shaped affair that he uses. I ordered one of these instruments once, but never got it.

Prof. Troop: I have one, but I never use it. They are not practical. Mr. Kellogg states that he does not manufacture them any more.

Mr. Grossman: I never did use one, and I never saw one used, but I think that one of my neighbors has one. I have intended to go over and see him use it, but I did not have time to investigate it. There is another method that I think is quicker. A spade of the natural length is used, and a short handle is attached, so that the person can set ahead of himself. The handle should be about ten or twelve inches long, then you can set ahead. There are four systems of planting. The hill system is very good. I have heard people who used to use that method say that they had abandoned it, for the reason that the plants would

heave in the winter time. In planting by the hill system they usually plant about two and one-half, or two feet apart, or you can plant eighteen inches and have the rows farther apart, but the usual method is to plant in the hill and cultivate both ways.

Prof. Latta: Is that your method?

Mr. Grossman: No, it is not my method. I never used it. The hedge row system is the system that is recommended by a great number of people in this vicinity. This is one of the best methods if you have time to do the work. It takes more work than the others, because you have to keep the runners off during the summer. The rows should be from thirty inches to thirty-two, to three feet, according to the wish, but if you have them two and one-half feet, and then plant the hills two and one-half feet each way, you can cultivate both ways. This system is used here by several growers.

Prof. Latta: I believe we would be better served if you would stick pretty close to what you do, with the reasons, and let the other fellow tell his way. This is on the ground of actual experience. Make this as strong as you can on your own experience. I want to bring out your experience.

Mr. Grossman: Well, I propose to set the plants thirty inches, or three feet apart, and I keep the runners off until the first of July in order to get a strong growth of the plants. If I get busy of course I allow them to take their own course, but I take off a portion of the runners when they get too thick. I have succeeded in getting good berries in this way, and plenty of them. I succeed better than with the hedge row. I get a good quality of berries, and I find that it is less work and the expense is much less. I can get a good crop of berries much cheaper than by any other method, and while by the other method they have larger berries, our market is not such that we can get an advance in price for the difference in the quality.

Now I wish to speak of the culture. I begin to cultivate these plants the minute I get through setting them. If I am delayed so as not to finish the patch in one day, I cultivate the patch that is already set, and I cultivate it after every shower. If we do not get a shower, I cultivate every week anyhow. I hoe them before the weeds can be seen. I am very careful to pick out the weeds from the sides of the plant, and not let them get started. I am keeping my patch thoroughly clean, and when the runners begin to run I have gotten rid of most of the weeds and the soil is loose and the runners can take hold. We have had a very severe drought this summer. Recently we had a rain and they are beginning to root now. The patch is clean so we will not have very much more trouble this fall.

I want to emphasize the necessity of cultivating often and thoroughly before the weeds show up. And I have learned a lesson this summer, which I have known before, but it has been most thoroughly impressed on my mind, and that is that by thorough and frequent cultivation when it is dry, you can keep the moisture in the ground. When you go out in the patch of a morning you can see by your foot tracks that there is moisture there, and when you kick the dust away you can see the moist dirt.

Prof. Latta: By frequent cultivation in a dry time do you mean once a week or oftener?

Mr. Grossman: Oftener would be better, but once a week if you have good, fine mulch will probably answer the purpose. I believe this is all I have to say.

Prof. Latta: We would like to hear from any one who has anything to add to this important subject.

Mr. DeVilbiss: I would like to ask what you use to mulch your berries?

Mr. Grossman: I use rye straw or wheat straw.

Mr. DeVilbiss: Can you get the straw without the timothy seed in it?

Mr. Grossman: No, I have trouble with the timothy seed, but that is the best I can do so I have to take it. I prefer the rye straw.

Mr. DeVilbiss: Why do you prefer the rye straw?

Mr. Grossman: It is better, cleaner, tougher, and will hold better through the picking season when the pickers are working, when the wheat straw will rot and get very short. The rye straw will stay cleaner, and will keep its length, and it is nicer for the pickers to work on.

Mr. DeVilbiss: Do you consider it a detriment for the wheat straw to break up and get fine?

Mr. Grossman: No, but it does not mulch the berries as well when it breaks up. The berries keep cleaner than they will with wheat straw that is all broken up.

Mrs. DeVilbiss: What kind of instrument do you use to cultivate your plants?

Mr. Grossman: I have been using a Planet Junior. But I prefer for the first cultivation a five tooth cultivator, and cultivate it deep before the roots begin leading out. The fine teeth will smooth it down. While I

am not advertising cultivators I like the Osborne. It is short coupled, and is shorter than the Planet Junior, and is not so far from the horse. It is solid, and yet light. You do not have to be so far away from the horse, and you can turn much easier than with other cultivators and it works better.

Mrs. DeVilbiss: Do you trim the roots before you set them out?

Mr. Grossman: Yes, I always trim the tops and the roots. I take what I can hold in my hand, which would be about three or four inches, and cut all the top off above my hand.

Mrs. DeVilbiss: Then you never take off all the top?

Mr. Grossman: I never leave but two or three leaves, and if it is dry and the plats are large I trim down to two leaves.

Mr. DeVilbiss: Do you ever puddle the roots?

Mr. Grossman: No.

Mr. Williams: Do you ever try using the hoe in your soil?

Mr. Grossman: No.

Mr. Latta: Did you state when you do this mulching, whether before or after freezing?

Mr. Grossman: I did not state that, but I prefer to do it after the first freeze, when I can drive across the patch with the wagon and not cut the ground. This is usually about the first of December with us. I am fortunate if I get the material to mulch with this year, for I fear it will be almost impossible unless I get marsh hay at five dollars a ton.

Mr. DeVilbiss: Do you ever use shredded fodder?

Mr. Grossman: I have tried it and it was excellent.

Mr. Latta: Do you ever have any trouble with heaving on this land?

Mr. Grossman: No, sir.

Prof. Latta: Do you find a difference in the heaving among the different varieties?

Mr. Grossman: Yes, sir; there is a difference. I have not paid much attention, because I have not had much experience along this line.

Mr. Williams: Do you ever set plants at this season of the year?

Mr. Grossman: Yes, sir.

Prof. Troop: What is your success?

Mr. Grossman: Very poor.

Prof. Troop: Why?

Mr. Grossman: I think the trouble is I do not have time to give them the attention that they should have at this season of the year. And possibly the ground is too dry.

Prof. Troop: Can you get a good, well rooted plant by setting them out this season of the year?

Mr. Grossman: Not very.

Mr. Flick: How about the potted plants?

Mr. Grossman: I tried potted plants a few years ago, but I didn't succeed at that time, but I tried again and gave them more attention and I had good success. I kept the plants in the shade before the first of August, and I had the biggest crop the next year I ever had. Probably I was more successful because I had studied handling the plant and gave more attention to the work, and didn't have other business on my mind to look after. I have no leisure at the present time so I have dropped that method.

Prof. Troop: I would like to ask one question, as to whether or not this is not a good time to set plants so as to get a part of a crop next year at any rate. At this season of the year they get close attention and plenty of water.

Mr. Grossman: If they do not get that it is better not to set them. I think I would be interested in hearing Mr. Feebles.

Prof. Latta: Yes, we would like to hear of Mr. Feebles' experience on clay soils, if you please. We would like to hear the points of difference.

Mr. Feebles: I have had some experience on clay land. It is not exactly clay soil either, for it varies some. It varies from knobs down to nice, rich soil, and the plants grow ranker down on the rich soil. If the upper soil is manured a great deal it will raise good berries. But, if I were picking soils I would pick one with more sand in it. I know clay works harder, is harder to handle, is harder to get ready in the spring, and is a little more wet in the spring, breaks up in clods and does not work as nice and the plants are harder to handle, but it holds moisture well, and if there is rain just before the berries are ripe, it holds it well.

Prof. Latta: Would fall breaking be advantageous to the clay portions or not?

Mr. Feebles: I do not think it would, for it would settle together and get hard. If you plow in the spring at just the right time, it gets nice, but you have to learn how to handle it.

Prof. Latta: If you have both kinds of soil do you find any difference in the methods you use for the two kinds? Do you handle the clay just the same as the formation on the slope?

Mr. Feebles: Yes, I plow over all the place, and go over all at the same time, but the plants grow larger of course, on the rich soil.

Mr. DeVilbiss: The berries are not quite so sweet. They will not bring as good a price in the market, will they?

Mr. Feebles: I think they are not quite as sweet.

Mr. Swain: Have you made a discrimination in the varieties you plant in the different places?

Mr. Feebles: No, sir.

Mr. Van Deman: Which ripens first, the clay or the low land?

Mr. Feebles: The clay.

Mr. Van Deman: Several days?

Mr. Feebles: No, there is not much difference in time.

Prof. Latta: Is your method like the method of Mr. Grossman?

Mr. Feebles: It is very near the same.

Mr. DeVilbiss: Has your soil been washed off a little?

Mr. Feebles: Well in clay spots there is not much sand. There is sand in all this soil, but where the soil washes the sand washes away. It is not exactly a clay soil, but a sandy clay.

Mr. DeVilbiss: Is it blue clay?

Mr. Feebles: No, it is yellow clay.

Mr. Swain: I do not wish to interrupt this discussion, but I want to call attention to the fact that I anticipate that the next topic on the program is a great deal like this one, and I fear we are taking the wind out of someone's sails.

Mr. Widney: I believe I am the next one on the program, so just give Mr. Feebles all the time he wants.

Prof. Latta: I am glad you have mentioned this point. We want to observe the point.

Mr. Feebles: I have the system of hedgerow altogether. They are thirty-two inches apart, but we plant them and work both ways until the first to the tenth of July, and then we let the runners alone. There will be two or three runners between the old ones, and after that we keep everything off. This makes a straight row and lets the sun in from both sides. The reason I do it is that I raise as many berries as I would if I should make my row one foot wide and put in a few more plants, but I always pick my berries the second year, and then burn off.

Mr. Swaim: How do you get the row for the second year?

Mr. Feebles: I let the old plants grow. I have one bed there, I think two, which I will pick, and they are a solid row from one end to the other.

Mr. Swaim: What distance apart do you put your rows?

Mr. Feebles: I put my rows thirty-two inches apart. I plow in cross furrows both ways.

Prof. Latta: Mr. Grossman spoke of the influence of the method of planting on the berries.

Mr. Grossman: I mentioned this in regard to the hill system.

Prof. Latta: Did you have the same experience?

Mr. Feebles: I have not had any trouble in this line. I have often had them to freeze out, but I guess this was because I didn't get them mulched quick enough.

Mr. Henry: Do you know what an acre will produce with that method of planting?

Mr. Feebles: I could hardly tell that, for I have used this method in a small way, I suppose about three hundred bushels. I have not experimented, so I can not give it exactly to the acre.

Mr. Henry: Do you get better prices for the berries raised in this way than for those raised in the row?

Mr. Feebles: No, sir; I do not get a better price. I think it is less work, however. Mr. Grossman thought it was not, but I can get more the second year. I would cultivate the plants right close to picking time.

Mr. DeVilbiss: Would you do that? That is an important point. I should like to know about when we should quit working the strawberries. I have heard that we should not work them after the middle or last of July, for you would drag the growth off of the runners. Have you had any experience along that line?

Mr. Feebles: I do this work just after every rain.

Prof. Latta: About how late—what months do you stop?

Mr. Feebles: About the latter part of August or the first of September. Perhaps I will work them once or twice more yet this season.

Mr. Henry: How many acres can a man take care of during a season by that method?

Mr. Feebles: I don't know. Not very many.

Prof. Latta: About how many would you judge?

Mr. Feebles: I should judge about two acres.

Mr. Henry: Do you find it profitable to raise just one crop—that is do you advocate taking just one crop?

Mr. Grossman: I find that is good. You get the very best berries on the first crop. I have found that to be true. Even in the row they look fine, but they are not quite as nice as they were the first year.

Mr. Hawkins: I think without exception that is the experience of all of us. I would rather plant out a two-acre bed at one time and attend it rather than to fix the old bed over, for I know that the new one will be all right. I think it is easier and cheaper to take care of a new bed than to try to take care of an old one. Sometimes I do not do this way, because I only plant one-half of my patch new at a time, but while one is growing I am getting the other ready, I am putting on fertilizer, etc.

Mr. Henry: I should like to ask Mr. Hawkins if the market might not have something to do with the method used?

Mr. Hawkins: In a market like this it is not worth while to discriminate in favor of the large berries, at least not enough to justify the increased expense. I think it is cheaper to plow up a patch, however.

Prof. Latta: Do you agree to that, Mr. Grossman?

Mr. Grossman: As a rule, yes. Under ordinary circumstances. Three years ago I had a bed of strawberries and unfortunately they did not do very well for some reason or other, and I carried them over, and the second year they did fine, and then I carried them over the third year and I got double the crop the last year that I did the first and I got better berries. I only had one-half acre.

Mr. Hawkins: I think that is exceptional, is it not?

Mr. Grossman: Yes, sir. But I think it was largely on account of rain. The planting, half of it, that I picked this year I carried over. And

you will remember that we had a very dry time here at berry picking time. The first berries ripened about the middle of June, and there hadn't been a drop of rain for about three weeks previous to this time, but we had a good rain about the fourth of July. It was very cold during the blooming season. My berries were not touched by the frost, but the berries were very far behind on account of the cold weather. I think we only got a half crop this year. But I will tell you about the crop last year. I cultivated until late, until November. If it is convenient and I have time, I bed them then.

Prof. Latta: Would you advise this on a large commercial scale or not?

Mr. Grossman: Yes, I would cultivate them.

Prof. Latta: Our experience is different from that.

Prof. Hedrick: Our commercial growers are more and more planting the cultivated crops, and are cultivating them until about the first of September. I would be afraid of the treatment he has just given for the late growth makes the plant tender, and I would be afraid of winter kill.

Prof. Troop: Do you keep your berries covered when there is snow on the ground?

A Delegate: In the southern part of the State there isn't much snow. Even if there were I would still use the straw in order to have the mulch in the spring when I pick my berries.

Mr. Swaim: I should like to ask one question. What do you growers do with the runners that start out after you quit cultivating?

A Delegate: They let them go. I think the second crop is always easier raised than the first crop, but the berries are not so large, and are not quite as good.

Prof. Latta: I would like to know if many of you here have any trouble with your plants being killed out by the winter?

A Delegate: We hardly know whether it is the winter or the late culture sometimes.

Mr. Grossman: I had a few killed out a year ago but not from late cultivation. I will tell you why it was. I mulched with straw manure, and wherever I mulched I lost the berries. It was not on account of the late cultivation.

Mr. Swaim: I used straw manure as mulch and never saw any bad results from it except this year, when I got quite a good crop of timothy from it, but you can always expect such as this.

Prof. Latta: I do not think it is a question of late cultivation.

Mr. Lodewick: I think that last winter was a very severe winter. It was with us, I know. As to late cultivation, cultivate just as long as possible right up in the fall, and as soon as we finish cultivating we cover them with straw.

Prof. Latta: Before it freezes?

Mr. Lodewick: Yes, sir; before it freezes. You can cover them without much injury to the ground.

Prof. Latta: Do you have compact clay?

Mr. Lodewick: Some of it is. We have a little high ground. I certainly approve of late cultivation. Last season was an exception.

Mr. Henry: I am surprised at the statements as to winter kill. We grow strawberries all over the northern part, and there is scarcely a winter when we are not troubled with this in some plants. If you lose some it usually means the loss of considerable in a large patch, so we take extra care. The reason that we cover our plants is that it protects them from winter kill. We had considerable loss in our patch on this account until I took very stringent means to prevent it.

Prof. Latta: How many are covering their crops in this part of the State? We would like to have a word on this.

Mr. DeVilbiss: The reason I covered my patch was because I was looking over my fence and my neighbor covered his, and had excellent results, so I covered mine. From the thousand plants that he planted he sold \$22 worth of berries, and kept plenty for a large family besides. I tried to buy straw that had no timothy in it, but it couldn't be found. I hardly know what to think of this cultivation. No man would go into his orchard to cultivate it in this way. I believe this is the reason they are having trouble.

Prof. Latta: Orchards and strawberries are different things.

Mr. Swaim: Strawberries need a great deal of rain, and they get it all winter, for after this time of year we are very apt to have an abundance of moisture in the soil, for there is plenty of rain. And whether we cultivate or not they will go on and make runners and they will keep on until freezing weather, so I don't believe under conditions here that it is wrong to cultivate late. We keep the weeds out then we want a covering for the crop of some kind. I am very much interested in this question.

Mr. Kimball: My experience with winter killing is this. The plants will heave, and in some cases, even when you have mulched heavily, and

then cultivated both ways, it leaves the plants on the hill, and the straw mulch will settle away and they will freeze out, even when covered. Four years ago I had a patch, and I was experimenting with thirty different varieties in order to determine which was best for myself. On the hills and hillsides I kept the runners off until the middle of September, quite a few runners came after that, and I simply let them go, and the next spring I didn't get good results. I had no strawberries that year for the plants were all heaved out. So it seems to me that winter killing is governed a great deal by the method of planting and the methods of caring for the plants. I hardly think you will have any trouble with winter killing on account of late cultivation. I have cultivated after we have had freezes in the fall. I think the main thing we gain is the killing of the weeds that will start out in the spring in great numbers. This is more than balances up the danger from loss by cultivating. :

A Delegate: Conditions are entirely different with us, for we have a very black soil—a rather heavy sandy loam, and we do not have any trouble with plants heaving. We always mulch just as soon as we can get into the patch after the ground freezes.

Prof. Latta: What about the length of time of cultivation?

Mr. Kimball: We usually cultivate up until October, and sometimes into November. We cultivate once a week or thereabout in order to keep the surface loose and the weeds out. So we cultivate up until the first of November or along about that time. I never have had any trouble at all with plants winter killing. I have tried shredded fodder and straw, but that is scarce.

Mr. Swaim: How do you like shredded fodder for covering?

Mr. Kimball: First rate.

Mr. Hawkins: Does it blow off?

Mr. Kimball: Not any more than the straw.

Mr. Swaim: Is it any improvement over straw as a moisture preserver?

Mr. Hawkins: No, I don't believe it is.

Mrs. Meredith: Does it have as many weeds and grass seed?

Mr. Hawkins: I hardly know about that.

Prof. Troop: In our country we do not have that kind of fodder. It is nothing but fodder. I would like to ask if you cultivate your plants in the spring before picking time?

Mr. DeVilbiss: I have always wanted to cultivate but my wife wouldn't let me do it. We did it once and she thought it spoiled the berries.

Mr. Widney: This winter our strawberries winter killed from a different cause than a severe winter, and those of you who have been in our section know that we have a natural drainage of soil, in fact we have a perfect drainage. We have a gravel bed with a loose clay subsoil eight or ten inches thick, and the rest is sandy loam. We lost a great many plants by winter killing as we call it, but we find that it was on account of the land. There was frost in the ground and the water could not sink through, and could not get away, so it laid on the bed all winter. Ordinarily in our soil we are not bothered with winter killing.

Prof. Troop: Some growers cultivate in the spring before it is time to pick the berries. Some of the growers out our way practice that, but not all of them. They take the straw off and cultivate, and put it back again. It gives the plants a better send-off in the spring to cultivate before picking. Does anyone use a weeder in their strawberries?

Mr. DeVilbiss: Yes, I do, and it is doing fine.

Mr. Feebles: Two years ago I did. I tried cultivating in the late fall and then using rye straw and the rye came up thick, and I went in and pulled the straw off and kept on cultivating until I got all over the patch.

Mr. Swaim: What is your objection to spring cultivation?

Mr. Feebles: I like it because it conserves the moisture, and kills the early weeds which would get a good start before the picking season would be over.

Mr. Swaim: Perhaps you are not in the habit of mulching very heavy. Perhaps not enough to keep the weed growth down. I do not see any objection to spring cultivation, except that it makes more work and more expense.

Prof. Latta: Would the compactness of the soil have anything to do with the question of spring cultivation just before fruiting?

Mr. Swaim: It might have.

Prof. Latta: Do you think it would have, Prof. Hedrick?

Prof. Hedrick: I think it might have.

Mrs. Meredith: We can count this in different ways. It takes about three hundred to the acre to get one hundred and fifty bushels. It takes you two years to raise what would be one crop of two hundred and fifty bushels or five hundred and fifty bushels for three years. I am always

thinking of the acre, and I am going away now, but I do not want you to forget to think about the acre. Are you satisfied when it takes the acre two years to do what it should do in one?

Prof. Troop: Isn't it better to raise three hundred bushels than only one hundred?

Mr. Swain: I would say that we raise a potato crop after we get the strawberries off.

Mr. DeVilbiss: I would like to hear Mr. Henry's experience in regard to late cultivation.

Mr. Henry: We grow ten acres every year. We cultivate just as long as we can. I had a good example of this last year. I have a neighbor across the fence. Our soils are exactly the same, and he is a man that likes to copy. He can not get away from home long enough to attend one of these Institutes. He told me this spring that I was the luckiest man he ever saw, for I had a crop of berries last year and was going to have one this year. There was no luck about it; it was all good management. In the first place he planted the weakest plants he could find. That is a wrong thing; I would not do it. After he set them out he let them get so weedy that when he went to clean them out he couldn't tell where the strawberry plants were. He never puts any manure on the patch. Now it was not on account of good luck that I have berries, but on account of management. This same man spoke of his varieties. He had Warfields, and he seemed to think they were no good at all, and I showed him Warfields which I had, and he wouldn't believe they were Warfields. My rule is to do the thing (not just think about it) which I think is the very best thing to do. Last fall about the middle of October I went over the rows with a garden rake and raked with all my might, and pulled all the runners out and stirred them up, and in a couple of weeks I mulched them. You ought to have seen the difference between the ones that I treated like this and the ones that I didn't. I believe this is a good plan.

I want to say something about Michigan. I am in competition with Michigan berries. My market is the Chicago market, and I can conscientiously say that I know I get double for my berries what they get in Michigan. I will tell you the trouble with Michigan. They have about two-thirds of their berries frozen out. Whenever the Michigan berries come into the market the market goes down. The trouble is, Michigan raises too many berries, and their berries are poor. If they would raise berries like Indiana there would be no kick coming. They raise too many, and therefore raise poor ones. Instead of raising ten or fifteen acres and not attending to them well, they should raise two, three acres, or a half acre, like the people in Indiana do. We put a better class of berries on the market. They generally sell theirs from sixty to ninety cents.

Mr. Grossman: I have been asked as to mulching. As I have said before, I mulch when the ground is frozen hard enough so that the wagon does not cut into the ground.

Mr. Van Deman: I would like to say that I was out to Mr. Pierce's place, and I noticed something that was new to me. He said he had been having trouble with his berries freezing out, just as we have been talking about, so a new idea struck him, and he is raising corn with which to mulch his berries. That was a new idea to me. It would certainly be clean. He grows the mulch right there on the land. I think this idea is worthy of our attention. It would be nice to provide ourselves with this mulch right at home. It seems to me that corn would be fine to keep the berries clean. I believe in mulching, and I do not know of any better material for this than the straw, except for the fact that in the straw there are so many kinds of seed. But it is also a dangerous thing to put on manure, for it, too, has seeds in it.

Another thing in regard to spring cultivation. I have tried it, but I would not advise its use. It is too expensive, but I do believe in late cultivation.

Mr. Henry: Wouldn't you be afraid the corn would shade the berries too much?

Mr. Van Deman: I would sow the corn. I would make it just as thick as I could get it to come up. I would cut it with a binder and shock it until I needed it.

Mr. Henry: Wouldn't the corn be worth more for feed than as a mulch?

Mr. Van Dieman: I think not.

Prof. Latta: I have had reasons for letting this discussion go on because you seemed to be interested, and in such case the Chairman does not feel quite competent to conduct this kind of a discussion, and he will feel thankful if the leaders in this line will give him their suggestions.

We will hear from Mr. Widney, of St. Joe Station.

Mr. H. M. Widney: I am like Mr. Grossman, and this has been a very embarrassing time for me from the fact that I have not been active in strawberry raising, until the past year, for three years. I have been in other lines of business, but from what our Chairman has said I consider that he wants us to give our own practical experience on practical fruit growing with practical reasons.

There is one thing which we have not touched upon in our talks this morning, and I feel that it is one of the essentials. You must have a first-class plant or your strawberry culture will be a failure, sure. I

think this point has not been touched upon. I have in mind my own experience. I was swindled by a vagabond strawberry plant salesman, and it makes me angry every time I think of it. It seems to me that there are several men that practice these illegitimate practices in our profession, so the first thing that we must do is to be careful what kind of plants we get, and be sure to buy of some responsible, first-class, legitimate grower.

Now, as to varieties. I have tried several new varieties, but I have found that it is pretty expensive to experiment.

The first variety that I wish to mention in this line is our old friend, Sister Warfield, if you will excuse the expression. She is certainly the Queen of the field. No difference whether you have a heavy or a light soil, if you have a good plant she will do all right. And it is an excellent berry for canning purposes. Every customer that cans berries likes it. There will always be berries the second year. I think it is without doubt one of the best canning berries we have in the market. The Warfield has been a standard for some time, and why should we forsake her now and take up some new variety that we know nothing about. I believe I would have had dollars where I now have only pennies if I had practiced this preaching.

We find that the Excelsior is a good berry. We have the Excelsior between two rows of Warfields this year. Our idea is to have it pollenized well.

On high soils or on light soils the Haverland is good, and I believe it is good on heavy soils, and we can speak nothing but praise excepting for its softness.

The Bismarck is another one, but on our light soil it is a failure. We have no more use for it. We have grown the Tennessee Prolific. At first we thought it was all right, but we have discarded it. Our reasons are that we ship berries and they will not ship well.

The Clyde with us produced a good amount of berries, but no foliage to speak of on our soil. On heavier soils I understand it is all right. The Brandywine is another. Our first crop was immense. We thought we had struck the keynote when we got our first crop of these. But it failed ever afterwards. It didn't seem to come up to the standard.

The Bubach is good. It is a splendid berry for our home market. It is attractive. It has a rich, waxy, glossy appearance, and when it is ripe is very good with us.

We tried the Parker Earl, but in our soils it did not prove what we had expected. I understand that it is better on heavy soil. The Glen Mary is no good on light soil. We have no use for it.

We were very much pleased with the Ridgeway. I will tell you that we were off of the farm for three years, and the man on the farm neglected the strawberries. We carried over the bed that had been there for three years, because it was a case of necessity. We found some

Ridgeways, and they were beauties, and I am inclined to think that they are all right. I think they are good in every respect. It does not grow so very large, but it is very beautiful. It is a nice, fine grade of berry.

Now, concerning the Senator Dunlap. I look forward to this berry as an ideal. It has a fine plant growth, and the berries are immense. If we have anything that is better than the Warfield, I do not know but what this is it.

We have the Cary, but it is not very good on light soils. We also have the Uncle Jim. It is a very sturdy grower. We have some of the fruit this year. On the Marie the plant growth is good, but what the fruit is I can not say.

I have covered what comes to my mind of these different varieties, but if there are any questions I shall gladly try to answer them. This matter of varieties is a very deep matter to all of us, but in conclusion I will say that I believe experience is the best teacher that we have, for what is good for our neighbor will not do well for us, and especially if there is a little variation in our soils.

Mr. Talbert: If you ever operated a sailboat you will know that you should stay very close to the shore, so you can not expect me to go out very far this morning. I am a very limited strawberry grower, yet I have grown some every year for a great many years; for more than twenty years, some twenty-five years, I guess. I started with the Wilson. That is a magnificent berry, but I haven't grown that for a great many years, having found others that pleased me better, but this was my first introduction into the strawberry business. The next berry that attracted my attention was the old Meyers Prolific. I am sorry I lost that berry. I was wonderfully enthusiastic with it. The berries were of a fine quality. The Longfellow was another berry that I have grown. I think a great deal of it. It is very fine. In the time that I have been trying different varieties of berries, I do not think I have tried out of the very large number that is being grown at the present time, more than thirty or thirty-five different varieties, so I can not go through the whole catalogue. After leaving the Meyers Prolific and the Longfellow, I tried the Old Sharpless, which was a magnificent berry in quality. Following this I tried the Haverland, and I have stuck to that berry and staid by it ever since. The Haverland is one of the most productive and best berries to my mind, and I believe it stands at the head of the list, and I do not believe I have ever seen it on any soil on which it was not a success. It is a success everywhere and under all circumstances. It will not disappoint you. I have had it ripen just two or three days after the Excelsior and have gathered it when I have gathered my last berries, and have gotten good berries all the time.

Then there is the Warfield that has been spoken of. The Warfield bothers me just a little, because it is one of those everlasting growers and keeps on growing and taking hold, like Russia. It wants to take

hold of everything in its reach, and that makes hard work, but it is a magnificent berry, and one that will not disappoint you. In Albion market it is a good one, and I have not been able to supply the demand for canning purposes. I can sell them at the highest price, and they grow on all soils.

The Brandywine is another berry that I have had good success with, and still have it. They bring about the same price that the Warfield does in the canning season. They are red all the way through, a fine canning berry, and has an aroma that is peculiar to itself. It is fine.

There is another berry that I like very much, the Sample. It is one of the best berries in the country. I am speaking, too, of berries for market as well as for the home. It is a late berry and you get berries late.

The Clyde is fully equal to the Haverland in production. This is a berry that will ripen very nearly as soon as the Haverland, and will continue late, and will grow big berries all the time. They never are nubbins. They start out big and continue to be big. It is hard to find a berry that is better than the Clyde.

Lovett's Early is very nice and ripens about the same time as the Haverland, and I would recommend it to go with the Haverland. It is now called the Lovett.

The Gandy is a late berry which I admire greatly. I have tried the Marshall. I do not know whether I have ever been duped by the nurserymen or not, but if I have ever had a Marshall I never want another one. The Gandy is one of the greatest late berries I know of, and for me it has succeeded admirably on all kinds of soils that I have tried. I have a sandy clay soil, but I tried it on a black soil and it succeeded fine. While it is not as productive as some berries, yet it produces a good crop.

Now there are a great many others that I have tried, and I think a great deal of some of them, but I am giving the varieties that are best adapted for market purposes as well as for the home. There are quite a number that I have not given, but I have mentioned the most productive berries.

Now, so far as soil is concerned, I will say in regard to that: The Brandywine with me hasn't done as well on clay soil as some other berries. It produces too many nubbins. On other soils I have had good, large, fine berries, and quite a number of them. The other berries that I have mentioned, have, so far as my experience has gone, succeeded almost universally on the different soils, and I have seen but little difference in their production.

Mr. Kimball: During the last seven years our organization has had this subject up a great number of times, and I have always noticed that when we get through there have been so many varieties discussed. The grower who wishes to plant a small patch for his own use is more at

sea than before the discussion began, I believe. I think we should discuss these in an intelligent manner, and bring out the best varieties for the different soils. I think if each speaker would state in this discussion the kind of soil he has, and three or four of the best varieties that succeed for them best, we could get real good from this discussion. The inexperienced grower wants to know what to plant. There are so many varieties that we are at sea to know what to plant and what not to plant. I will simply state that on heavy clay soil the Gandy has been quite a success, and on high soil the Haverland has been a success. I find that the Haverland is a success on all kinds of soils. I also like the Warfield. So then, we have three varieties that we can depend on. If you have black soil I would not advise you to plant the Gandy. I am on the lookout for other good berries.

Prof. Latta: A request has come to the chair, asking that we ask for the best five varieties from the different growers. Suppose we have in mind the varieties that are good for market varieties on clay soils, or would it be better to limit it to three varieties?

Mr. Grossman: I think that would be most too narrow.

Prof. Latta: I would like for the strawberry people to be thinking of their soils and the five varieties that are best suited, in their judgment. We can get a consensus of opinion in a very short time in that way. We can accomplish more in the time at our disposal than otherwise. Please be getting your names ready.

Mr. Grossman: My soil is largely loam—sandy, black loam—and I would name first the Warfield, the Bederwood and the Ridgeway, for a home berry, and also for fancy market, and the Senator Dunlap. This is a good berry and will go with the Warfield.

Mr. Widney: Our soil is a loam, with a gravel subsoil, and a clay strata through it. I would put the Warfield at the head of the list; the Haverland second, with the Bederwood and Dunlap, and for a late berry the Gandy.

It seems to me that we should state here what berry we want to pollenize another berry with.

Mr. Van Deman: It will be new to a great many people that there are varieties so imperfect that they will not produce berries alone. That is something, of course, that skilled horticulturists take for granted and never think of mentioning. I have known people to grow berries with a great deal of care, and raised nothing at all, excepting a very few imperfect berries. There is a great difference in berries, and you must be sure to get a pollenizer that flowers at the same time. I thought this subject needed to be mentioned. For instance, the Dunlap is excellent for the Warfield, and will do for the Haverland.

Mr. Swaim: My soil is sandy loam. It is heavy, sandy loam, and mixed with clay. Before proceeding with other varieties I have a word to add. My observation is that wild berries are the same as tame ones, and will not produce without a pollinizer. I have found that kind.

Mr. Van Deman: I do not think it is true of the native American type.

Mr. Swaim: I would place the Warfield with the Dunlap for pollinizer, the Haverland with the Clyde, and the Gandy for late.

Rev. Talbert: I have two perfect flowering berries and three imperfect—the Haverland, Warfield, Clyde, Sample and Gandy.

Mr. Henry: What kind of soil have you?

Rev. Talbert: I think it would fall in the clay soil list. Will you give us a list?

Mr. DeVilbiss: Is your soil clay?

Mr. Henry: Yes, sir. This is the hardest thing in the world to do. I would suggest the Warfield, Haverland, Dunlap, Klondyke and Bubach.

Mr. DeVilbiss: In order, I would plant the Bubach, Haverland, Michael's Early all the time for a pollinizer. The Gandy will not ripen good and will not fertilize up good. Our subsoil is very heavy clay, and the top soil is extremely heavy.

Mr. Feebles: I have had experience with many, but I have the Haverland with Lovett, the Bubach with Lovett, the Brandywine, but it did not do very well, so I will not include that.

Mr. Lodewick: This is a very difficult matter to decide. If we are to name only five I would name the Warfield first, Haverland for a late berry, and then the Gandy and Sample. I hold part of my patch back to ripen with the Gandy.

Prof. Troop: I want to add my list. Warfield, Haverland, Clyde, Dunlap and Bubach, and I want to add the Gandy for late. I would not give the Michael's Early room. I want a berry that will do something besides fertilize.

Mr. Swaim: The question of varieties is an important one. We want to know just what to do, whether to stay by the old or take up with the new. There are a number of promising new varieties, that were left out here today entirely, but they are very promising.

Prof. Latta: We will now hear from Prof. Troop.

Prof. Troop: There is not much to be said on my subject, "Prevention of Diseases and Insect Depradations." There are a few specimens of insects that attack the strawberry that have not been mentioned here, and among them is the leaf roller. The leaf roller is a little moth that attacks a plant in the spring of the year, laying its eggs on the leaf and rolling them up, and feeding on the green portion of the leaf. Now this little insect often does considerable injury to plants, especially where plants have been grown for several years in succession. When a bed is left in the same place for two or three years, this insect may be very bad the last year or so, and if strawberries are grown right in the same vicinity year after year it will give serious trouble until something is done. This little moth lays its eggs on the leaves and begins its work just about the time the fruit is ripening, so it would not be possible to poison it on account of poisoning the fruit, and anything that would poison the insect would poison a person. So then, it is not practical to use poison upon it, because the fruit would be poisoned at the same time. This little insect must be handled in some different way. The only way that I have found to treat it is to burn over the strawberry patch after the fruit is picked. There has been quite a good deal said about this, but my experience is that this is one of the best things that can be done with a strawberry bed if you are going to leave it for another crop, is to burn it off. In this way you destroy all the leaf rollers, and any other insects that may be there, and at the same time destroy all the weeds, and your plants will come on clean and healthy and good. Now this one thing tells the whole story in regard to most of the insects. Not all. This is fine for the leaf roller and all the diseases that attack the leaf of a plant. Many varieties are subject to the rust.

Mr. Van Deman: Are you troubled with the white grub?

Prof. Troop: Yes, we are. But when you burn the patch off the plant comes up nice and fresh. I wonder how many of the growers in this vicinity practice burning over their strawberry beds? A number do, but not all. You will find that this is one of the best things you can do if you leave the bed two or three years. Some are afraid of burning plants because it will kill them, but it will only help them, and you will be surprised when they come up again, and see how fresh, vigorous and bright the foliage is. Burning will destroy all the insects above the ground that attack the strawberry.

There is a little beetle attacks the roots of the strawberry, and another attacks the crown of the plant. The eggs are laid in these places.

The white grub is one of the hardest things to manage. This is under ground, and about the only way to kill it is to set moles to work and they will do the work, but they are about as bad as the

grub. The only practical way is the frequent rotation of the crops. Do not allow the plants to stand in one place very long. Plow them up. Move the bed to some other place. In this way you will often get rid of this insect. Do not give them a chance to increase—do not let them get started in one locality. In plowing, plow up the plants in the spring and give the birds a chance to get the worms. The birds will clean up the white grub better and quicker than anything else. If you want to plow in the fall, plow before the birds have gone in the fall, and they will take up large quantities of them.

Another thing is clean culture. You should clean up after a season is over. Many insects hibernate in the dead, dry leaves and pass the winter in them and come out in the spring and lay their eggs. By cleaning up this rubbish in the fall this is prevented.

I think this is all I want to say, except to answer questions, if there are any.

Mr. Henry: I would like to ask Prof. Troop about strawberry rust over the state.

Prof. Troop: In some localities it is very bad. In some varieties it is much worse than in others. This is a thing that should be studied in selecting varieties. You should get varieties that are as near rust proof as possible. The Bederwood is early flowering, but it is subject to rust.

Mr. Grossman: I know that, but I have understood that it has been held in check by the use of the spray pump.

Mr. Lodewick: Do you have any preference as to the kind of mulch you use?

Prof. Troop: We use clean wheat straw if we can get it.

Mr. Lodewick: Isn't oats just as good?

Prof. Troop: We do not use oats unless we have to, for it is too dirty.

Mr. Lodewick: In case of burning the bed, does that make any difference?

Prof. Troop: Well, when we do not cultivate before picking time the weeds get too much of a start.

Mr. Lodewick: I always go through the beds with a hoe several times.

Prof. Troop: Well if you do that it will do.

Mr. Widney: Isn't it a fact that you find shredded corn fodder about as clean a mulch as you can get?

Prof. Troop: Yes, sir.

Prof. Latta: Have you any questions about insects?

Mrs. DeVilbiss: Can you get rid of these insects by simply plowing before you plant?

Prof. Troop: I would not set plants in the ground where there were insects.

Mr. Henry: I have seen green worms on some of the old beds. Is that the same as the currant worm?

Prof. Troop: I think that is a species of the saw fly. It is another species of the currant worm which works on strawberries.

Mr. Henry: Do you recommend the spray pump for one crop a season?

Prof. Troop: I do not do it. There is no use in it. It is only where you leave a bed for several years that they are attacked by these insects and fungous diseases. It may be that the white grub is in the ground and is ready to mature when the plant is there. In that case there will be trouble the first year. It takes four years for the grub to mature, and it must be in the ground for the first two or three years. The year before it comes to maturity is when it causes trouble.

Mr. Van Deman: I think that Prof. Troop has stated the case in as concise a manner as possible, and the whole subject of fungous diseases can be almost abandoned if we will just endeavor to raise just one good crop and quit, and plow under, and get another setting of young plants. This has been my experience and observation in my travels that I have made from north to south and from east to west over the country.

Prof. Latta: Now Mr. Kimmel we will give you a chance. I would like to suggest one thing right here, and that is that in your talks you would limit yourselves to two minutes, so as to give a chance for quite a variety of questions and expressions of views.

Mr. Grossman: Will you please explain. Does this discussion confine us to strawberries or small fruits?

Prof. Latta: To all horticultural topics except apples.

Mr. Kimmel: Mr. Chairman—In the short time we have I shall not hold myself in readiness to answer any questions that might be asked, for there are many in the audience here who are able to answer any question that may be asked, as they have made quite a study of this. I have

not had much experience along this line. I should like to hear from three or four of you about pedigreed plants. I should like to hear from Mr. Van Deman what he thinks about them.

Mr. Van Deman: If you ask me I shall have to say that I think if you try pedigreed plants one year you will let them alone the next. I think there has been a good deal of hob nob on that point, and I will not spend any time discussing it. I will let theorists do that.

Prof. Latta: Have you any other questions on this subject that you wish to ask at this time? I believe Mrs. Davis has something to say to us, and we will give her two minutes right now.

Mrs. Davis: I would like to answer a question that has been asked me a dozen or more times. I have been asked why I raise plums instead of letting Mr. Davis raise them. I want to say to you that I was fortunate enough to get one of the smartest men in Laporte County, but he would not raise plums, and I wanted plums, so I went into the business myself, and I have made a success of it so far.

Mrs. DeVilbiss spoke of Mr. Morrell's orchard and said that his peaches did so much better on the hill than in the valley. Our experience is entirely different. Mr. Davis took the advice of some Michigan friends and planted on the highest spot, and the wind comes along and sweeps through the orchard, and three times our fruit has been killed. In the valley the wind is tempered before it reaches the fruit and it does not winter kill. Without regard to variety they will kill by freezing. I have some of the finest peaches I have ever seen anywhere. I sent thirty to the World's Fair by American Express, but it took them four days on the way, and when they got there they were spoiled. I find that peaches are very successful in Laporte County, but we did not have success on the hills, and I would not advise anyone to plant there.

Mr. Kimmel: I would like to ask Mr. Feebles if he considers it of importance to the grower to propagate his berries?

Mr. Feebles: I think that this is very important. I think that the grower should grow his own plants himself, and know just what he is growing, and grow only the best.

Mr. Swaim: If this were to happen what would become of the professional plant growers when each man raised his own plants?

Mr. Widney: I think that some of them ought to go out of business. Mr. Lodewick and myself have had some experience in getting plants from professional plant growers—I will not mention their names, but the

experiment was very unpleasant. We have both of us tried a firm in Michigan which we have found honest and trustworthy and always sends us good goods, and we would not change from them.

Mr. Swaim: I had experience in purchasing from three or four different firms in Michigan and I believe the plants were all right when they left. They were shipped by express.

Mr. Widney: When you receive a bunch of plants packed in trash you can just decide they are not very good.

Mr. Swaim: In reply to Mr. Widney's remark I will say that I would not accept plants received in that condition, and I do not believe any man is worthy of the name of professional who sends out berries in that condition.

Mr. Widney: We had paid for them, so what could we do?

A Delegate: Now, in regard to pedigreed plants, I want to say here that you need the experience in selecting strawberry plants the same as you do in selecting seed corn.

Prof. Troop: Will you please explain what you mean by selecting plants. Do you mean selecting the breeds year after year, or selecting the strongest plants?

A Delegate: I mean selecting the breed year after year.

Mr. Kimmel: What is your idea, Mr. Troop.

Prof. Troop: I think there is something in it. I will say that I have tried Kellog's plants several years, and I set them out by the side of home grown plants, and I attended to them in the ordinary way, and the result was, if there was any difference at all, it was in favor of the home grown plant.

Rev. Talbert: Is it not a fact that plants are far more satisfactory to the grower if they are taken up and set out the same day right in your ground? Are the chances not greater in favor of their living and producing good, strong, healthy growths much better than when they are removed a long distance?

Mr. Kimmel: That has been my experience.

Mr. Van Deman: I think, Mr. Chairman, it is all right to select from the very best stock you have. I think that is certainly the correct thing to do. I do not believe in any high spun theory on pedigree. I think it is a nuisance. I believe in selecting from the best stock you can get. But I have seen plants raised right by the side of the home grown plants, and if there was any difference it was in favor of the home

grown plant. I think it is a good idea to move plants just as short a distance, and plant them within as few hours from the time of taking up, as you can. I think this is right, and that is one reason you can have better success with the plants that are home grown than otherwise. I believe in this doctrine. I would practice it wherever possible.

Mr. Henry: I would like to ask Prof. Troop if he will make a statement as to what he is doing now.

Prof. Troop: I will not give results, but I will say that last spring we started an experiment along this line. We sent to Kellogg to get four different varieties of his pedigreed stock, and we got some other varieties from a dozen different localities—from four or five different states—and we planted them all out together on the same ground and gave them the same treatment, and in a year or two we will say something in regard to the result of this experiment. At the present time I do not see much difference.

The only advantage that I can see in raising our own plants is that we can set them out the same day. The trouble is that we are not always ready for the plants when they arrive, and we have to heel them in for some time.

Rev. Talbert: I will say that when I raise a propagating bed for planting I will dig the entire row up and throw every plant that is not worthy of being set out, and only set out the very best.

Mr. Williams: When you have a plant bed it throws out runners. Where will you get new plants for starting? I will not use an old plant to set out a new bed. Do you have any rule by which you cultivate?

Rev. Talbert: To illustrate. I want to set out a lot of plants next spring. This spring I will set out plants and next spring I will take up the row and throw away all the weak plants. I will leave the plants that are well rooted. I have had poor plants sent to me, but I will not put them out unless I have nothing else. I only put out good plants. The plants that I set out I take from those that have never produced berries, and I follow this plan up year after year.

Prof. Troop: Do you take the first new plants that are made?

Rev. Talbert: Yes, sir, I take the strongest plants.

Mr. Van Deman: I think Mr. Henry told us something of value some time ago, and that is to take a forked hoe and go into the patch and pull up the runners by the roots and only leave the strong plants. I know the common practice is to cut off the runners. Others will come out if you do this, but if you follow Mr. Henry's suggestion they will die and never amount to anything, and the mother plant will be a great

deal better for your having destroyed these young ones. This is the case when raising strawberry beds for plants as well as for fruit. This month and next month go along and tear up the runners.

Mr. DeVilbiss: Take a weeder and go over the patch and you can take three rows at a time.

Mr. Henry: A weeder isn't strong enough; it takes more muscle.

Mr. Van Deman: If you will use the weeder long enough and quick enough I think you can succeed. If you wait a day too long you will not succeed.

Prof. Latta: The meeting stands adjourned until 1:30.

WEDNESDAY AFTERNOON SESSION.

Prof. Latta: The meeting will now please come to order. I think that we might take a few minutes right here in regard to the question that Mr. Stanley asked last night. He wanted to ask it again this morning, but it seemed that we did not have time for it. I think we can discuss it here now while Mr. Van Deman is getting ready to give us his discussion. His question is in regard to cultivating during a dry time. As I have said, it should have come up this morning, but we passed it then, so we will take it up now. Mr. Stanley, will you please repeat the question as you would like to have it put?

Mr. Stanley: I put the question as to the advisability of plowing corn frequently during drought in extremely sandy soil, but I will change that to any soil, and if there is any difference I should like for it to come out in this discussion.

Prof. Latta: Well now I would like to ask first how many corn and strawberry growers do cultivate their corn or strawberries, and keep it up during the dry weather? Are there any that cease cultivation during the dry time? If so, will you please raise your hands. Now the reasons that we will have will be from practice. We will have your views first, Mr. Stanley.

Mr. Stanley: I will say that I cultivate during dry seasons, because my father did so and he was a successful corn raiser, I simply did it because he did. I do not believe I ever destroyed a crop by doing so. I have loam, clay and sandy soil.

Mr. DeVilbiss: I cultivate during a dry time with a fine-toothed cultivator, and if it becomes an extremely dry time so that there are cracks in the ground I take an old mower wheel and hitch a horse to it and drag it through the rows. This will close up the cracks and in the driest time will keep the corn green and keep it from firing.

Prof. Latta: Would you cultivate in this way once a week or oftener?

Mr. DeVilbiss: Oftener if I could. The more I stir the soil the better, for I get a mulch of fine soil about two inches deep.

Mr. Henry: Yes. This keeps evaporation from taking place so rapidly, and keeps the soil moist. I think subsoiling is one of the best things that can be done. This makes a reservoir for holding water.

Mr. Widney: If you have noticed after a rain often there will be a crust formed on the top of the ground. Whenever this happens it is the same as allowing the wick in your lamp to be pinned loosely, the capillary action of the soil is paralyzed, and that is the reason we ought to keep up this constant cultivation. Along this line allow me to mention one thing that some of you have heard. Last winter at our institute Mr. Johnson was with us. I believe his idea was correct, although our spring was so late this year that not many of us got to practice what he preached. His idea was to thoroughly pulverize the surface before turning over with a plow, and then to pulverize the upper surface.

Mr. Stanley: I would like to ask this question. During harvest we are so busy that we do not have time to go into the corn for possibly two weeks. I want to know if it would be injurious to go into the corn and cultivate it after it had laid these two weeks, or had we better leave it alone?

Mr. DeVilbiss: I believe I have been very successful as a corn grower. I go right into the corn and keep the ground stirred.

Mr. Stanley: The theory advanced is that we should just break the crust. I do not think it is a wise policy to break the crust after it is once formed, for it will break the roots. I allow the crust to remain until after a rain comes.

Prof. Latta: I have been in corn fields and examined them after a rainy spell, and if you will examine them after several days of rain you will find many little root heads coming close to the surface. This is only after a spell of dampness—several days of rain—and in such a case I think you will have to choose against a limited amount of root destruction and the renewal of the moisture. You may need this for the dry weather which will follow. I do not know that we can answer this question more definitely.

Now I wish to say a word on the question of pulverization. Take Prof. King's first book on the soil, and it is based on actual laboratory tests. We have made the same tests in our laboratory that were suggested by him. He discovered that in cans filled with soil the evaporation was greatly reduced by stirring the top of the soil, not allowing it

to settle down again into close relation with the underlying soil. I think the best corn growers in the state are following the method of repeatedly stirring the ground during dry weather; shallow but frequent cultivation.

Mr. Stanley: I would like to hear from Mr. Harvey on this question.

Mr. Harvey: I do not have anything to add, except to say that I agree with what has been said on this subject.

Mr. Henry: It is very hard to convince some of our old farmers that it is a good thing to cultivate with a small toothed cultivator. They would be using the wide cultivator from daylight to dark and think it is the best. Is this not on account of the fact that in their younger days they planted corn deeper, and for that reason the roots were deeper, and they could use the large cultivator to better advantage? I wonder if there is anything in this?

Prof. Latta: Is it not that with the better soil the plants were better able to stand it?

Mr. Henry: Yes, possibly that is true.

Prof. Latta: This experiment with the cans demonstrated that if the soil is let alone the water evaporates from it much quicker than if you kept stirring the soil. This principle has been well established, that you want to keep the ground thoroughly pulverized. Keep it in that form by frequent cultivation.

We have three topics this afternoon, "The Care of the Bearing Orchard," "Marketing and Storing," and "Enemies of the Apple and their Treatment," besides some resolutions. We have two gentlemen to speak on the "Care of the Bearing Orchard." I think I shall take the liberty of saying that each of these men shall speak fifteen minutes instead of twenty. We have used some time with the question that was left over. Mr. Van Deman will speak first. He is from Washington.

Mr. Van Deman: Mr. Chairman, Ladies and Gentlemen.—I suppose in all the lists of horticultural subjects there is no one which deserves more thorough attention than the care of the bearing orchard. Now in practical life there is every sort of treatment for the apple orchard from letting them absolutely alone after the hour the trees are planted until they are finally vanishes or vanquished by weeds. We have in this State, and in a great many states of the Union, a great many old orchards, and I think perhaps we ought to mention this first. There are a great many old bearing orchards that have been neglected until they are absolutely worthless, or nearly so, and in my opinion there are a great many of these that it would be better to cut down and make into fire-

wood and get rid of them entirely that it is to let them stand and cumber the ground. But there are a great many others that if they were properly cared for would return a good, handsome profit to the owner. I want to say that while there may be a great many who believe in the practice of using these old orchards as calf pastures and horse pastures and hog pastures, and all that sort of thing, but they get from the orchard an inferior quality of fruit. While it may be proper in some cases to make this kind of a compromise, it is not the proper thing to do as a rule. The farm may be so arranged that there is a more logical solution of the question, but if we intend to get the real good of these trees, we must not undertake to make a pasture or a meadow out of the orchard.

I presume that you have all heard of the grass mulch method of orchard treatment. There are several orchards in this country that are in successful bearing under this sort of treatment. They are not among the oldest orchards, but still some are quite old. I refer particularly to the orchard of Mr. Hitchens, in New York. I have been in this orchard many times. Some of the trees are about sixty years old, and are in thrifty, healthy, profitable bearing condition standing in the grass. This man holds strictly to the practice of taking nothing whatever from the ground excepting the apple product. The grass is mowed once a year, and he mows this orchard and leaves the hay on it to rot on the ground.

Now there is another case in Ohio, near Delaware. The orchard is owned by Mr. Burgoyne. These are two of the most notable cases of the successful grass mulch method. The soil is adapted to this kind of treatment. There are springs above them that come out and penetrate the soil, keeping it moist and the grass grows rank and green throughout the summer. This is not the case in the ordinary apple orchard. Other people are trying this method, and some are plowing up their orchards. If we would take this matter in hands right away, and would plow up our orchards between now and fall before cold weather sets in, it would not hurt. I would sow something (cow peas or clover) on this ground, and next spring turn it under. This makes it fertile. The nitrogen will be taken up by these growing plants and if left upon the soil helps it. By all means do not put hogs in an orchard. Sheep will not hurt old trees, especially if you will feed them grain or bran. They will keep adding fertility to the soil, and what they take from the land will be given back again. I think a fine thing to plant in an orchard is cow peas. They are very fine to turn under to fertilize the ground. You would be surprised to see what a condition the soil will be in afterwards. When you have cow peas in the orchard you can turn the hogs in and they will not bother the trees. The hogs will fatten on it, and you will have brought your orchard into a very much better state and so will profit thereby. You must not always be taking something away from the orchard and not returning anything. The average farmer wants to see how much he can take away from his trees instead of how much food he can supply to them.

You must add something to the soil for the benefit of the fruit. I do not believe in the grass treatment for the average orchard, but there are conditions under which it is certainly successful. I think it all depends. You will be surprised at the vigor trees will put on after being treated like what I have suggested. In western New York, which is the greatest apple growing section of the United States, a great many of the old orchards that have been standing there for years and years in grass, have been plowed up and tilled, and they have borne abundant crops of fruit, where before they were bearing but scanty crops. In some cases the people have taken out an entire row of these big trees. They have taken out about three-fourths of the trees and are treating the remaining trees in this manner, and the results from the one-fourth remaining are much more than they could have possibly been from the whole number originally there.

Prof. Latta: That is heroic treatment, isn't it?

Mr. Van Deman: Yes, sir; and that is one thing I want to say about the general manner of orchard treatment. The apple orchards when they get old have changed from apple orchards into apple forests. There are a great many people who think they are in the fruit business when they are really in the forestry business. Apple forestry. I have seen trees, apple trees, and a great many of them in the State of New York that were twenty feet to the first limb. The trees were planted about twenty-five feet apart. These people are simply in the forestry business. And what do they have for fruit? They have a few scrawny apples.

As a whole, young orchards are planted too closely for permanence, but not too close for temporary purposes. If I had my choice I would plant my permanent trees not nearer than forty feet apart, and I think fifty is better, and I would fill in between the permanent trees with peaches and plums and pears, and possibly with apple trees that would come into bearing early. I feel complimented because I was the originator of this idea in Kansas. This I think is the better idea—to put in the temporary trees that will come into bearing early and serve their purpose before they come in conflict with the other permanent trees. I would plant these trees with the purpose of cutting them out whenever the time came that they interfere with the permanent trees.

Prof. Troop: Will the average man do this?

Mr. Van Deman: No, the average man will not.

Prof. Troop: Wouldn't he have to take the pledge beforehand?

Mr. Van Deman: Well, that is true, that might be a good idea. But if a man has sense enough to go into the fruit business he should have

enough sense to cut out these trees when they begin to interfere. Why not cut them out when the profit from the permanent ones is much greater than all combined?

Mr. Swain: Won't the average tree be ready to come out by the time they interfere?

Mr. Van Deman: A great many will, and a great many will be in a healthy, thrifty condition right at that time, I might say. I would plant such varieties as the Wealthy, Oldenburg, Jonathan, Grimes Golden, Wagener, etc. These will come into bearing from five to eight. The Fall Pippin is very tardy in coming into bearing.

Now in regard to cultivating trees. I should expect to cultivate them for at least five or six years without having a crop in there, excepting something that would be thoroughly tilled during the summer months. As soon as the ground can be worked in the spring I would begin to cultivate the ground. When an orchard is young it is all right to plant corn in it. I would not plant close to the trees, but would leave a space. Potatoes and vegetables are good crops to plant. I want to plant something that must be tilled during the summer months of May, June, July and August, and then cultivation should as a rule stop. I do not believe in very late cultivation of apple orchards. I think five years will be the limit for this kind of cultivation. It is now time to stop cultivation and let the trees have room. I would not let clover stand more than one year. As I have said, the trouble is that most people try to take something out of the ground and off of the ground into the barn instead of devoting the soil to the orchard crop. That is the great stumbling block over which so many fall, and where they make their saddest mistake.

Nature has supplied the average farm with an inexhaustible supply of potash and phosphoric acid, but not nitrogen. But there is nitrogen in the air, but we might as well try to dip the ocean dry with a pint cup as to take the nitrogen out of the air. We can follow out nature's suggestion by raising cow peas, clover, vetch, and other crops of this sort, and get some of this inexhaustible supply of nitrogen. This is the one element that we pay more for than anything else when we buy fertilizer, and it is supplied right at hand. It fills every particle of space about us, and if we will only make use of it we do not need to go to the factory for fertilizers.

I would be glad to hear from anyone that differs with me, and should like to know just wherein they differ.

Prof. Latta: Mr. Flick, have you any questions to ask?

Mr. Flick: Do I understand Mr. Van Deman to say that this course will supply to the soil all that is necessary to keep up the fertility?

Mr. Van Deman: I think it will on the average soil. There may be poor soils on which it will not apply.

Mr. Flick: What about phosphoric acid and potash?

Mr. Van Deman: It is there.

Mr. Flick: This system that you described would not restore that if it was missing?

Mr. Van Deman: No, sir. It would not add one atom to it. There might be soils in which it might be necessary.

Mr. Flick: I think it is quite frequently so in this State, especially as to the acid.

Mr. Van Deman: It is more seldom than people think.

Prof. Latta: Mr. Flick, let me ask you if in your experience you have found it necessary to use phosphoric acids?

Mr. Flick: Yes, sir.

Prof. Latta: To buy them?

Mr. Flick: Yes, sir.

Mr. Van Deman: In Western New York they have made quite extensive experiments with this purpose in view of determining whether or not it is necessary to go to the fertilizer dealer and buy the acid and the potash, and I think in some cases they find that it is necessary, but in many cases they find that it is not necessary, and not profitable. When we buy potash in sacks in the form of fertilizers it will be nitrate of potash, which is the cheapest commercial form. By using this it is sometimes said that you can tell the difference in the rows. They found this difference in regard to the phosphoric acid. I think as a rule it is more necessary to buy that than the potash for the average soil in Indiana.

Prof. Latta: Are there others that have found as Mr. Flick has found that it is necessary to supply phosphoric acid to the orchards?

Mr. DeVilbiss: I have thirty acres in orchard and I could not get a stand of clover, and I hauled ashes to the orchard. I had three hundred loads of ashes and I put them on the orchard. I want to speak of alfalfa. I sowed about two and one-half acres of the alfalfa three years ago and I got an excellent stand. It was so thick I could not leave it stand another year. I had to have the hay so I cut it and took about four loads of hay to the barn. My idea is to continue this, and I have sowed another strip of four rows of trees, and it is growing just like weeds.

Prof. Latta: That applies to the question of potash, but not to phosphoric acid.

Mr. DeVilbiss: The clover will grow now where it hasn't grown for years.

Mr. Flick: How about the apples?

Mr. DeVilbiss: Come to the fair. The immediate results are a healthy condition of the soil, the growth of clover. This is about all we can do with old orchards. I have been doing this and I find it is ne plus ultra. Do you think if I continue this I will get too much nitrogen in the ground?

Mr. Van Deman: There is a chance of that. In Idaho and on the Pacific Coast they will not use alfalfa in the orchards there, and are condemning its use.

Mrs. DeVilbiss: Will they leave it on the ground or take it off?

Mr. Van Deman: They will not sow it there at all. They do not even have it there. They plowed it up and destroyed it. I would rather work with something else than alfalfa. There may be cases in which it will work all right, but as a rule I like something that is more temporary in character. It would grow for twenty five years and the roots will grow so big you can not cut them with an ordinary plow, and they are so mean to cut that I want to take a visit when the alfalfa is to be cut, and want a hired man that will not swear.

Prof. Latta: Mr. Flick, tell us how long you have been getting apples from these orchards—the reasons and the results. In other words show us your belief in the use of phosphoric acid. Have you followed this method or another method?

Mr. Flick: My orchard is now about thirty years old. It has been bearing a number of years. I have several varieties of trees. I have been trying experiments on my orchard. I try clean cultivation, and in this part I plant my garden. Another plot is for partial cultivation. Here I cultivate between the trees as far as I can without injuring them. The other plot I do not cultivate at all but allow it to grow up in grass and weeds. I make a pig pasture of this latter some part of the year. Now my apples are usually nice ones. I had a bitter fight with insects, but I find my fruit is growing better from year to year. At first my trees were not growing properly. I got all the manure I could get in the neighborhood and put it on. And I was like my friend, Mr. DeVilbiss. I had occasion to get some ashes for the hauling of them, and I hauled about four tons to the acre and spread it under the trees, all alike in each of the plots, and I found this very effective. The next year the trees were

more thrifty, and the fruit was larger and had a better color. I have sowed cow peas and have excellent results. I have no fault to find with Mr. DeVilbiss' plan in his orchard, except as to the alfalfa. I can't say as to that. He has given the proper method and the general rule. Some might take exceptions to clean cultivation on rolling land. This is our problem, "to find out what kind of soil we have, and then study out what to the best of our judgment it needs."

Prof. Latta: With reference to the phosphoric acid in the ashes. Do you know what per cent. there was?

Mr. Flick: I think about two per cent.

Prof. Latta: May your results not be attributed to the phosphoric acid rather than the potash?

Mr. Flick: Both, I think. The potash gives flavor and color to the fruit.

Mr. Van Deman: There is no form in which it can be added to the soil better than by the use of wood ashes. If I had the opportunity of getting ashes for the hauling, I would haul at night, and would feel like hauling on Sunday. If I did not I would think about it. Here is one who would haul all the wood ashes he could get on a place. You can not get too much.

Mr. Widney: You have struck a question that is of personal interest to me. It is a question that is very hard, and that is when an orchard is in a certain condition just what to do. I have a young orchard of ten acres. It is now in red clover. Since last season I have kept it in clover. We have taken one crop of hay off of the orchard. The second crop has grown up very nicely, and our intention was to place this orchard in potatoes. What do you advise, and what would you follow with the next season?

Mr. Van Deman: I think the potatoes are all right. After the potatoes I would plant in cow peas, even after the potato crop is off, which would be in July. Rye or Canada peas would give profit. You would have a wonderful crop of humus to plow under.

Prof. Latta: How would vetch do in such a case?

Mr. Van Deman: Excellently

Mr. Widney: Isn't there danger in cultivating vetch of its becoming a pest?

Mr. Van Deman: I hardly think so.

Mr. Widney: Do you think Canada peas sowed the last of July would mature?

Mr. Van Deman: I would not plant them unless I was sure they would. I know some of the best farmers that plant peas in the fall. There is one thing about commercial fertilizer. It is put in such a form as to be immediately available. It is like setting a bowl of soup before hungry men. But if you did not give them soup they would hustle for something else. This is just what the tree will do. We can assist the tree by giving it land thoroughly tilled. Tilling the soil unlocks the potash and phosphoric acid and saves the necessity of going and buying that which is immediately available.

Mr. Widney: Have you any certain system of plowing a young orchard?

Mr. Van Deman: This is my plan of plowing a young orchard. Suppose this middle row was in apple trees. I would break this row thoroughly this year, making a deep furrow next these other two rows. Of course I would plow so as not to injure the trees. Next year I would reverse the back furrow. Use this alternating plan, and in this way keep the ground about level.

Prof. Latta: This subject is very interesting, but I think we must close at this point and take up the next topic.

We will now take up the next topic. This is by E. H. Williams, of Indianapolis, Indiana. He has been in the commercial fruit business for years and can speak from intimate acquaintance on this subject—the subject of market and also of storage.

E. H. Williams: Mr. Chairman, Ladies and Gentlemen—I have noticed this fact in all the speakers preceding me, and that is they emphasize one feature of their address, and that is the necessity of knowledge and information on the subject before us. Solomon said, "In all of your gettings, get wisdom." I am like the persons who wrote the resolutions. I am sorry there are not more of the young people here to take what is said out over the country. If I understand the object of this meeting it is for the purpose of creating an interest in horticulture in this part of the State. If I may judge by the land and the location of the country, this country is very well adapted to horticulture. This occupation would be much more profitable than some of the industries that are being carried on here. Now I have taken the position that this meeting is for the purpose of awakening an interest in the industry that would be of great benefit to this part of the State, and perhaps the first thing that might suggest itself to us is the market. When the average American looks at a question like this he looks at the financial standpoint and

if he does not see dollars and cents in it, his interest lags, and we have to create an interest before we can get people to engage in an industry. This would be the first question. Is there a market for my fruit if I go into the horticultural business? Fifty years ago fruit culture was not known in a commercial sense. It has been developed in the last half of the century, and even of that time perhaps within the last twenty-five or thirty years. This business has been developed until it is now one of the largest industries in this country and one of the most profitable. There are three important factors that have brought this about. They have entered into creating the market and developing the fruit industry into a commercial size. The first of these is the railway, the next the canning industry, and the third the refrigerator, or cold storage. These are the three elements that have come into the fruit business and have developed it to wonderful proportions. I remember when at Indianapolis there was only one man in Marion County that was growing strawberries for commercial purposes, and now there are hundreds of them. It is being developed all over the State. Fruit which we once thought could not be marketed is now shipped long distances. We did not think the red raspberry could be picked and sent to market, but now they are shipped everywhere. Our market is now almost without a limit. The canning industry came in for the purpose of taking care of the surplus, and is a factor we should not lose sight of. The quantity of apples and berries and fruits that have gone into tin is beyond measurement. I wish we had better figures so that we could know the amount of fruit that goes into tin. This is helping to save the surplus all over the country. I am perhaps better posted on the tomato than any other, and know more about how many go into tin. I can remember when the tomato was placed on the shelf with the pomegranate and the children were told not to handle it, because they thought it was poison. Now, what is the result? Last year fifteen millions of bushels went into tin, to say nothing of the raw consumption. So you see what we are doing for the market on this line. So there seems to be no opportunity to overstock the market, for when we have too much we have this method of storing things away for future use. The amount of money interests us. When you take fifteen millions of bushels of tomatoes it represents practically fifteen millions of dollars. Now this is just one item. So you see this fruit business and vegetable business is growing into wonderful proportions. It has brought a vast amount of money into our country, and we are making use of land that is not fit for anything else. This market stands as wide open surely for everybody as it does for Indianapolis people. We are engaged in planting out orchards of different kinds of fruits, and if more people would stop farming and go to raising fruit they would find that their farms would pay much better. It seems to me if I were writing on the gate post I would write "Ichabod." Men are making failures because they

do not obtain the knowledge that is right at their very doors. Many of you here are experienced horticulturists. With this market before us comes another question that is of great importance in this industry, especially to men who are engaged in it for the first time, and that is the marketing of the fruit. You can grow the finest apples grown in the State, and you can grow the finest berries, and you can destroy the entire value of them by putting them on the market. There is more in my judgment in knowing how to market a crop than there is in growing it. A man may be able to grow fine fruit but may destroy his profit when he comes to marketing it. Take this as an illustration. A man wrote to me once and said: "I have some very fine Maiden Blush apples. What can you do with them?" I wrote back and told him that I could sell them for him at a profit. This man shipped the apples to me. I was indignant when they arrived to find that he had shipped them in a sugar barrel without even sweeping the sugar out. He had sacks over the top, and the apples were loose and had rolled all around in the barrel. They were really nice but they did not look very nice fixed up in this style. There were five barrels of these and I put them up at what I thought they ought to bring and I didn't get a bidder. I thought I would try my hand so I ordered them sent to the shop to be rebarreled. I took other barrels and repacked them. Out of the lot I got seven three-bushel barrels and I threw away all of the ones that were bruised. I now put these on the market and they sold as fast as I could roll them out. I got much more for them than I could have under the other conditions. There was the profit destroyed for the man. As I have told you, these were the finest Maiden Blush apples I had ever seen.

I had another experience about like this with peaches. There was a certain party raised quite a number of peaches and he wanted me to handle them for him. I consented to do it. This man happened to be a relative of my wife, so I thought I would show him what a bright man his cousin had married. I told him how to put the peaches up and when they came to me I was surprised. He had gone into the woods and cut down a tree and hollowed it out and put boards across the ends and put the peaches in there and nailed the covers over the sides. I was very much surprised when I saw how these peaches had been shipped and I could not handle them in this manner so I telegraphed the man not to ship any more peaches. He wrote me back a letter that was not very complimentary, and, if he was a relative of my wife's, we have never corresponded since that time, and I think he set me down as the biggest fraud he ever saw. I can't help that. If these peaches had been shipped in the right kind of packages they would have brought the man a profit. As it was they were entirely lost. This is the method usually adopted—that of selling through the commission man. There are dishonest commission men, I am sure. Well, I presume there are. I don't know whether I ought to say that or not, but of this I am sure, and that

is there are good commission men, and these men will look after your interests and will give you a great deal of information that will be of vast benefit to you. They will give you advice that will make you dollars and cents. This brings me again to the question of packages. This question has undergone quite a change in the last few years, and it should undergo more. This has been brought about on account of cold storage. Part of it is on account of the different markets. Different markets demand different packages, but I dislike the non-uniformity of the packages. There should be no snide packages. The Horticultural Societies should see that packages should be uniform; they should be just a certain size and no others ought to be permitted. When they go to the consumer it would be much better. I went into the market the other day and asked them the price of berries and at one place I was told that they were ten cents a quart. At another I was told that they were fifteen cents a quart. I asked him if he called the measure a quart. He seemed to think so, and I told him I would give him ten cents for a quart of the berries. He agreed, and had to sell me three boxes before they filled a quart. The honest man is working at a disadvantage until he establishes his reputation. Every man ought to have a brand on his box, either his name or the name of the farm on it in order to guard against snide packages. They would have to fight hard to establish their reputation, but in time it would come. There is a man in Indianapolis, and Mr. Flick knows him, who brings currants to me, and I have sold every currant before his wagon was in sight at \$2.50 per bushel, more than currants were bringing that were shipped in. His fruit being all the same. You did not find bad fruit mixed in. You will find that the best fruit will bring the best price, and if you are going to sell fruit you might just as well get the best price for it. Do not start in with the idea that you can put a stove pipe in the middle of a barrel, fill it with small fruit, and have fine on top and build up an honest reputation. This will work once only. You can fool all the people some of the time, and fool some of the people all of the time, but you can't fool all the people all the time.

Now in gathering fruit, gather it at the right time—when it is ripe. You will have to govern this of course, by the distance from the market. If you are going to ship your fruit to New York or Chicago you will have to pick it sooner than if you were going to market it right at home. You must bear in mind that the time of transportation will ripen the fruit to a certain extent.

When you are packing fruit, pack it tight. You can't hurt apples by packing them tight. You may mash them flat on the bottom, but when you take them out of the barrel they are just as sound as they were when you mashed them.

Mr. Van Deman: What do you think about the apple box?

Mr. Williams: I think it will supersede the barrel. The barrel is becoming very expensive, and the box has proven that it assists in the sale. People will buy a box when you can't persuade them to take a barrel.

Mr. Swain: Does the box have any advantage over the barrel in cold storage?

Mr. Williams: That is a question to come in later. I was on market in Indianapolis the other day and I found five different sized boxes in the same crate of peaches. I went to one stand and asked him what he asked for a box. He replied, "Twenty cents." I asked another what he asked for a box and he told me "Fifteen cents." I bought this one for fifteen cents, and then went to another fellow and asked him what he charged, and he told me "Twenty cents." I told him that I had just bought one for fifteen cents, and he assured me that if they were the same size he would give me his box of peaches, as he thought mine was a smaller size than his. I thought they were the same, and pulled the box out to see, and I found that he was right, for his box was the largest, and that in the end it was the cheapest to buy the twenty-cent box. You see, it is hard to discriminate between the sizes. The Horticultural Society should see to it that a law is passed which provides that these boxes shall be uniform. There have been laws passed, but they have never done any good.

Cold storage has been introduced recently. It is very important for this reason: It used to be that when the apple time came they had to be sold, and oftentimes there would be too many on the market, and of course the price would be low. Now, in a case like this they can be put in cold storage and sold when we get ready to sell them. They can be held off of the market until the market restores itself to natural conditions, so that cold storage, which is being established in every fruit section, is changing the method of marketing fruit. So if you have a large crop of apples there is no danger of your losing on it. People go out and buy the fruit and ship it to a large cold storage plant and save it until such time as it is necessary to put it on the market. You are relieved of your surplus fruit in that way very largely until such time as the market will take it at a profit to you. You are not placed at the disadvantage of having to put your apples on the market whether you want to or not when there is a cold storage plant. You can ship your apples to a commission man in Chicago, Indianapolis, or New York City, and say to him that you wish your apples held until January or February or March. He will put the goods in cold storage and hold them.

Now, this question of boxes is becoming quite popular in cold storage houses, because the boxes are easily packed away, and they do not occupy so much space. This is in the experimental stage. Apples are usually kept in cold storage at 31° or 32°. If I were going to keep

them until spring I would put in at 18° or 20°. They will freeze clear to the core, and remain that way until they are ready for the market. I would keep them at that temperature until they are ready for the market. These are conditions that are being developed very rapidly. The Government of the United States, as well as the Experiment Stations are taking this up, and by a little energy on your part you can get bulletins on how to do these things. It doesn't make much difference how far you ship fruit. You can ship it almost any distance you want to and it will arrive in good condition. Glutted markets can be avoided to a very great degree. Of course, the market will sometimes become congested with the best that you can do. I believe that cold storage will be a greater success if you will run the temperature down instead of up. I do not think that freezing an apple hurts it at all.

Mr. Flick: Doesn't this freezing of the apples in cold storage injure the keeping qualities of the apples when they are brought out?

Mr. Williams: I want to say in the first place that I would bring up the temperature gradually until I got to the temperature at which I expected the apples to be placed when on market. I once ordered a car load of apples from Chicago and they were shipped in an open car, and when they got to Indianapolis they were frozen solid clear through, and I'll tell you I was a mighty blue man. We put them in the cellar, and let them stay there two or three weeks and then put them on the market. When they came to us they were frozen so hard that they slid all around in the barrels, and did not seem to fit any place, but when we went to them after they had been here two or three weeks they were as tight as they were when they were first put into the barrels.

I had another experience last year. There happened to be a great many Ben Davis apples, and I packed twenty-five or thirty bushels. We put them in the ground, and they were not covered very well, and every rain that came wet them through. They laid there and all froze as hard as a bone. It would thaw then freeze then thaw and freeze. I supposed the apples would not be fit for anything. I left them there until April, and when I took them out they were as crisp and nice as could be. They didn't commence to rot until the latter part of May. I don't believe we lost a peck of apples until that time. I think we have found that cold storage will help us. I'm going to quit, but if you care to ask me any questions I will be glad to answer them.

Mr. Grossman: Do you keep the temperature as low as 18°?

Mr. Williams: Yes.

Mr. Swain: Have you experimented in keeping apples any length of time at that temperature?

Mr. Williams: Not any great length of time.

Mr. Swaim: Isn't the temperature usually 31° or 32°?

Mr. Williams: Yes, just below freezing. If there is an insect there the 18° will hold it there, and there is no change apparently in the apple. But my experience in taking apples out of cold storage is that this 31°-32° will hold the insects. If you will go to Indianapolis you will find a great many wormy ones there. Insects can not do very much on an apple when it is frozen.

Mr. DeVilbiss: Do you think it would be practical for a man who had fifteen or twenty acres in apples to attempt to build a cold storage on his own premises?

Mr. Williams: That is a question I can hardly answer. I would rather infer that someone else had some apples around there if this man had fifteen acres, and in that case they might co-operate and go into partnership and build a cold storage. They might do this for the benefit of themselves and their neighbors and make money out of it, too.

Prof. Latta: You have struck the keynote on co-operation, but our people are asleep on this question.

Mr. Grossman: Have you come to any conclusion in regard to the cause of the rust and the scald? Is it especially noticeable on certain varieties or on all varieties? Does the temperature make any difference?

Mr. Williams: I think the temperature has something to do with it. I am inclined to think it has all to do with it. Experts have not been able to decide what is the cause of the scald on the apple. It is being experimented on in different temperatures, and I think they have discovered that certain varieties are affected with the scald much more easily than other varieties.

Mr. DeVilbiss: Have you ever noticed them scald when they are packed in boxes?

Mr. Flick: Yes, I have.

Mr. Williams: I have not seen the scald so extensive when they are packed in boxes except on coast apples. Our native fruit has not been handled very much in boxes yet, but it is very successful.

Mr. Flick: There will be a great deal more known about this cold storage business after the close of the World's Fair in St. Louis. We have fruit from every part of the United States there. At the close of the Fair we will have a record of the different varieties shown there; the different conditions under which they grew, and the different treat-

ment of the orchards. We will have a record that will enable us to tell something about the influence of temperature, and the influence of boxes, and all these things upon cold storage fruit. So at the close of the Fair we will know a great deal more about this. Some of these things have already been investigated pretty thoroughly, and I think the results of our investigation will show this. Apples should be picked before they are dead ripe. Some varieties are much more susceptible to scald than others.

Mr. Williams: In regard to running the temperature down below 30° or 31°. It has been found that it stops all the insects from work and keeps them still. It stops the diseases and the insects that may be in there, but when this fruit is brought to market it will not keep; it will lose its flavor. These are two very vital points. Fruit when taken from the cold storage should be consumed immediately. It may be kept a few days until it can be disposed of at a profit.

Prof. Latta: Isn't that an argument for the smaller packages?

Mr. Flick: Yes; at the World's Fair the fruit is almost all packed in bushel boxes. It comes out of the cold storage in a much better condition than you would imagine. Week before last there was taken out of the cold storage at St. Louis some Indiana fruit which had been put into cold storage last fall at Indianapolis, and shipped to St. Louis in April last, and we found it in perfect condition. One barrel which was wrapped came from this neighborhood. Another which had no wrapping was entirely gone down. It was not the same variety of fruit, of course, but that doesn't seem to make much difference.

Mr. DeVilbiss: Do you think it is better to sell to a commission man or to private parties?

Mr. Flick: I would not advise anyone to hunt up a private party to whom to sell their fruit. If you have an honest commission man, and most are that kind, the best thing to do is to let him sell the fruit.

Mr. Williams: I had a man that tried to sell to a private party one morning. He came to my office and told me that he had sold his berries. I asked him what he got and he said \$2.00, and that very day I could have given him \$2.50. So you see how it usually comes out.

Mr. Stanley: I would like to ask this question. Is there any case on record where a commission man failed to pay for any produce that he bought?

Mr. Williams: Yes, lots of them.

Mr. Stanley: Is it any worse this way than to sell through a private dealer, or a commission house?

Mr. Williams: It is usually better to sell to a commission man, as you are much more safe than to be selling to Tom, Dick or Harry.

Mr. Stanley: I think we should make ourselves safe with a private person just the same as with a commission man.

Mr. Williams: Suppose you should ship your fruit to a private party, and he had all he needed. What would you do?

Mr. Stanley: I would consider it a poor business proposition to ship the goods before they were sold. I would know that they were sold before I would make a shipment.

Mr. Widney: I have had some experience along this line. I tried to market some potatoes in Cleveland. I found this market glutted, and the Chicago market glutted, and the market at Pittsburg full, and I found an opening at Cincinnati, where they wanted some potatoes. I should just like to ask some of these gentlemen who do not believe in commission men how they would have gone about the matter of selling these three or four cars of potatoes? I went to Cincinnati and investigated the commission men, and then went and sold my potatoes, and I saved from fifty to seventy-five dollars in the way I packed the goods, and I got my idea from the commission man, too. They had plenty of barrels, and so he told me to load my potatoes in bulk. Now, how would you have gone about selling those potatoes without a commission man? That is what I would like for someone to explain to me.

Mr. Swain: It seems to me that this discussion has arisen on account of a misunderstanding. I do not think Mr. Stanley meant to insinuate that he would dodge the commission man in any way, he was just talking of selling outright and not selling to a commission man. If he got more from the commission man he would sell to him just as quick as anyone else.

Mr. Williams: In a great many sections this is being done: When there are three or four or five cars of strawberries going out, probably there will be a man standing there who will ask you how much you will take for your shipment. They are speculating. They sell to the dealers in smaller places. He lets the grocer sell them on a commission, so the grocer takes no chances at all.

Mr. Swain: In justice to the strawberry grower in the State of Indiana, I believe I ought to add that I think Mr. Williams is surely mistaken when he says that it took three quart boxes of berries to fill one quart measure. They were certainly pint boxes. If that was the case I think he is right. I do not believe there is any strawberry grower in the State of Indiana that would do such a thing.

Mr. Williams: I did not even say that these were Indiana berries. I would just like to ask the strawberry growers, however, if their boxes hold a quart?

Mr. Swaim: The Star boxes hold a quart, for I have measured them. They have sixty-eight cubic inches. There are several different kinds of boxes, however. Three short pints will just make a quart. This makes quite a difference.

Mr. DeVilbiss: When I sell the skimpy ones I always sell them for a light quart.

Prof. Troop: I want to say a word on the box question. I believe, as Mr. Williams says, that this Horticultural Society and the societies of this State in every locality should take up this matter--this question of uniform packages. I believe the time is coming when the State of Indiana ought to have a law requiring all packages to be of a uniform size. If they are not of a uniform size it should be so marked on the box. It is a fact that you can go into the market in any town in this State where berries are shipped and find two or three different sizes of boxes. And the funny part of it is that they are all put on the market as quart boxes. Many of them are snide quarts. They hold very much less than the others. At the fruit stands and at grocery stores they will charge you just the same for them as the others. There are very few that know the difference. I think the bottom is farther up on some than on others. I have tried many times, and you take three of these wine quart boxes and it will take only two full quart measures to fill them. That is the difference. And, as I have already said, I believe some action along this line should be taken, and there should be a law compelling the manufacturers of boxes to make them of a uniform size. If they are not full quarts they should be marked short, and marked in a place where everyone could see it, so that they would know they were getting a short box. Then no one could make you believe they were all the same size.

Mr. Williams: I think the short boxes should be cut out altogether. I think the short boxes should be eliminated entirely, and we should have uniform boxes. They are not only in berry boxes, but other kinds of boxes as well.

Prof. Latta: This is a proper subject for a resolution if someone wishes to present it.

Prof. Troop: I think this should apply to baskets as well as to boxes. I want to tell you this little incident. Last spring the grocerymen began selling potatoes by the pound, sixty pounds to the bushel, and they sent them out in baskets. I bought three bushels of potatoes and the three bushels fell short forty pounds. That is not right.

Mrs. Harvey: I came to Kendallville last spring and bought a bushel of peaches in a basket. I took it home and took the same basket and filled it with pears and brought them back to town to sell, and the very same man said, "This is not a bushel; it is only three pecks." I said, "Yes, but it was a bushel when you sold the peaches to me."

Mr. Lodewick: I want to ask if it would be fair for us to have certain kinds of packages when the fruit that is shipped in from other States is sold in the smaller measures?

Mr. Williams: I would like to answer that question. That was the objection used against this to the State Horticultural Committee appointed to draft a bill for the Legislature. It died a-borning, and I have never heard of it from then until now.

Mr. Lodewick: I notice there is not much difference in the quart boxes.

Mr. Williams: The consumer will notice the difference, and will buy the fruit much quicker if it is in the larger box. You should establish a reputation that will stick to you.

Prof. Latta: We will now hear from Prof. Troop.

Prof. Troop: Possibly most of the people understand many of the insects and diseases affecting the orchard, and I brought along this chart to illustrate some of the things that I want to say, and we should first keep in our mind when we are trying to fight insects of any kind that there are two classes of insects so far as their getting their living is concerned. One class of insects eats its food and the other class sucks its food. This class of insects that affect the apple will eat the foliage, another will eat the fruit. Now this class of insects can be destroyed, or held in check, by the use of some arsenite. Paris green or something of that kind. Anything that kills by being taken into the stomach will kill them. The other class that may affect the foliage or stem of the fruit is the class that gets its food by sucking. It does not chew its food, but simply pierces the tissue of the leaf or stem or twig and sucks the juices. You can not kill these bugs with Paris green or arsenic or anything of that kind. It must be destroyed by some substance that will kill it by coming in contact with its body. I am often asked how to kill these bugs. One man told me that he found his trees were literally covered with them, and that he put Paris green on the trees, but that it didn't have any effect on the bugs whatever. He said it seemed to him as if it only put life into them. Of course, it wouldn't kill them. He didn't understand what he was trying to do. This particular point is not thoroughly understood by a great many people. They know how to manage anything that will eat the foliage, but a great many have an idea that Paris

green will poison anything. This is not true. There is another insect, the scurvy scale, that is found in the orchards everywhere. They make the branches look as if they might have been whitewashed. Paris green will not kill them. You might use something like soapsuds or something like that. You will have to use something that comes in contact with them, for they will not eat anything and take it into their stomach. You may know something about the codling moth. I wonder how many fruit growers here have spray pumps and spray their orchards in the spring of the year? You might put into practice all the theory that has been advanced here this afternoon in regard to cultivating fruit, but if you omit this one thing you will make a failure of it. The time has come when the apple has so many enemies that you have to fight and fight from the start to the finish in order to get perfect apples. Spraying and spraying intelligently will assist you greatly.

Mr. DeVilbiss: You do not mean to say that you can not get perfect apples without spraying, do you?

Prof. Troop: I can hardly say anything else. If you do not you will find a great many insects and diseases affecting the apple. There are but two of the latter that amount to much: The apple scab and the orange rust are very bad in some sections of the country. It seems to be much worse in some places than in others. Bordeaux mixture is a very good remedy. The time to spray is about the time the buds are swelling. This is when they get in their work. This should be kept in mind if you are spraying for any of the plant diseases. Spray before they get in their work. Kill them before they get into the tissues. After they get into the tissues there is not much use of spraying. You can't stop it. This is true with all of the diseases. This Bordeaux mixture is all right with any fruit, if you will only spray at the proper time. I have heard people say it didn't do any good to spray, but I have always thought they did not spray at the proper time. As I have said, in spraying for these two diseases, spray early before the spores get root in the tissues. You should spray two or three times, but the first time should be about the time the buds are swelling. I haven't found a mixture that is better than the Bordeaux mixture.

Mr. Swaim: What is your opinion of using copper sulphate in solution?

Mr. Baxter: This sticks to the tree better if you use it with lime.

Mr. Swaim: Will spraying at the proper time destroy all the insects that bother the apples?

Prof. Troop: Not all.

Mr. Swaim: I hardly mean just that. Will it affect all specimens of insects?

Prof. Troop: It will.

Mr. Swaim: How about the Rose beetle?

Prof. Troop: I thought you referred to those affecting the apple. This is very difficult to reach with anything. They are the worst enemy we have. We have been trying all kinds of methods for this, but we haven't found anything very effective as yet.

Mr. Van Deman: There is nothing that will kill it.

Mr. Baxter: I have had some experience along this line, and lessened the number quite perceptibly. I used Paris green and sulphate of copper, and lime and sulphur. I thought perhaps they might get it into their beaks. I have found quite a number of them dead under the trees that I treated. It seems to me they are the worst insect enemy we have.

Prof. Troop: They could be destroyed, but the thing is to destroy the insect without destroying the tree. Some things will kill the foliage as well as the insect. A great many of these insects hibernate. When they go into the ground it is very difficult to do anything with them. Many hibernate in the rubbish and dry grass and leaves. This is one reason why clean cultivation is so good. If they are hibernating in the leaves and the leaves are cleaned up and destroyed they are destroyed in them. They are hard to destroy.

Mr. Baxter: I thought I killed some of them on account of their being under the trees, but they might have been ready to die.

Prof. Troop: The probabilities are they were ready to die.

Mr. Baxter: Have you any cut that shows the Rose beetle?

Prof. Troop: No, I haven't a cut of that.

Mr. Baxter: You will remember I sent you some of these insects. They were entirely new to me.

Prof. Troop: They are of a yellow brown color with long legs and a long snout.

Mr. Baxter: Why is it that we can not kill them?

Prof. Troop: I can not answer that. These beetles are very difficult to destroy.

———: About how large is it?

Prof. Troop: About one-half inch to three-eighths of an inch. It is of a brownish yellow color, with long legs.

-----: What can be done to prevent pear blight or tomato rot?

Prof. Troop: That is something the United States department has been working on for years.

Mr. Van Deman: There is nothing that will destroy pear blight. All you can do is to try to destroy the source of the disease.

Prof. Troop: You should be very careful in cutting off pear blight wood, so as not to inoculate the other parts of the tree if you use the same knife again. It becomes a difficult matter to stop pear blight when it once gets started. Some varieties are affected more and some less.

Mr. Van Deman: In the apple it usually doesn't affect a shoot more than a foot.

Prof. Troop: No, not more than that.

Mr. Grossman: My Yellow Transparents are blighted so that I fear they will die.

Prof. Troop: That depends on the locality. I have had so many tell me that they are having serious times with their Yellow Transparent, and I have some right in among the other trees that are blighted, and the Transparents do not have a bit of blight on them.

Mr. Grossman: I would like to know whether there is any difference in the blight between the orchards that are cultivated and the ones that are sprayed?

Prof. Troop: Someone that has tried that can answer that question. There is a great deal of difference in the varieties that blight, and our orchards are made up of two or three trees of a kind. Some orchards are cultivated and some have been sowed down in grass for years. I believe that those that have been cultivated all the time have blighted worse this year than others.

Mr. Grossman: That has been my observation. I have noticed that the crabs have blighted seriously this year, and instead of stopping it is getting worse and worse.

Mr. Flick: Some recent investigations by the Commission appointed by the State of California has recommended certain things with regard to blight. First, that manuring pear trees should be avoided; second, that the trees should be starved partially.

Prof. Latta: I think with a few announcements we might close.

Mr. Feebles: I move you that we give a vote of thanks to the people of this church for their kindness to us while we have been here, in the use of the church and the furnishing of the special music we have had.

Mr. DeVilbiss: I second the motion.

(The motion was carried.)

Prof. Latta: I think all of you here are interested in this work, and you have certainly heard some good talks here within the last two days, and it will now rest with you to do the rest. You can carry out these ideas if you like, and put them to practice on your farms or in your orchards. This is one of the objects in starting these meetings. If they are of service we want the meetings to be held. During the coming winter we will hold more of the Farmers' Institutes than ever before in the history of the work. The plan is to hold the institutes in the county in proportion to the area, and the number of days will vary from two to five in the largest counties. I think this county entitled to four days, according to the area. I hope the people of this county will rally to the support of Mr. Stanley, who takes up the work for the first time, and needs your co-operation to push the work forward to the success that it ought to have. This is a sample of the work that is being done. I think you have had a high-class sample. Now, it is up to you to make use of the sample. It is simply a pattern for you to follow, and I trust that you will go out with the determination to support your chairman and make these meetings that are held in your own county a success during the coming winter. These remarks will apply to all the counties as well. The meeting will now stand adjourned.

NATIONAL FRESH FRUIT EXHIBITS.

PAPER READ BY WALTER S. RATLIFF, BEFORE THE WAYNE COUNTY HORTICULTURAL SOCIETY.

When county fairs are held, special efforts are made to secure exhibits of fruits of various kinds from the districts in which these local displays are made. These may include many kinds of fruits, or they may embrace only such varieties as are available at the time of these exhibitions. In the limited space generally allotted and for the want of time that is necessary in the collection and care of exhibits, together with the light premiums generally offered, the displays are far from being extensive.

In State exhibitions, where fruits are shown, grown in the several counties of each State, more effort is made to make and maintain larger and more varied exhibits than are found at local fairs. In these, special efforts are made to exhibit a larger number of varieties of the staple kinds of fruits, as well as plates containing the best specimens of each. In order to do this, later methods of keeping fruits out of season have been employed in many cases by the exhibitors. This materially enlarges the usefulness of State fairs over local ones wherever held, as naturally the number of people attending them would be larger, stimulating greater effort to make these State exhibitions more complete.

In national fairs, interest is not only shown by the people of the several States and Territories, but by foreign countries as well. And from the care taken by individuals and the funds expended by corporations and countries in their management, much is expected to be gained therefrom.

The present World's Fair at St. Louis is looked upon not so much from the extensive preparations and exhibits that characterize it as the greatest of expositions, but from the character of the displays and the means employed to maintain them. It is true that in former international shows some effort was made to preserve fresh ripe fruits by the liquid process, but it has been left to the present fair to demonstrate the system of other means of preservation.

At Chicago a few States had displays of fresh fruits in the natural state aside from the citrous kinds and grapes. At Buffalo more concerted effort was made, but the plans largely failed through a partial failure in the fruit crops of the United States. At Paris many of the awards for fruit were given to American exhibitors who sent their fruits abroad, which was not only gratifying, but largely repaid them for making exhibits so far from home.

The extent of the present exhibit can be surmised when it is known that thirty of our States and Territories, with Canada, have made the entire exhibit. No foreign country has any fresh ripe fruits on exhibition*. This is quite a disappointment, as foreign fruits are much in demand for comparison with our own, as to size, color and flavor. Upon the tables in the Horticultural Palace more than 20,000 plates of fresh fruits are daily maintained, aside from the large quantities used in designs and oddly-arranged decorations. On these plates are placed five of a variety, of equal size, color, and free from imperfections.

Each State elects the qualities upon which its fruits are to be judged, and upon these the results of the awards largely depend. Indiana takes uniformity of size, good keeping qualities and unequaled flavor. Some of the Western States elect large size, high color and good keeping qualities, especially is this done as compared with fruit from the Central and Eastern States, as the texture of flesh and flavor seem to belong to the latter.

Several exhibitors have profited by former exhibitions and have made the best showing possible, while several States never before entered an international fair. Most of the exhibits not only include last year's crop, but of the present, as fast as it is matured. This will give opportunities to observe shipping qualities of many varieties when transported overland, aside from the use of the cold storage system.

Virtually all of the principal kinds of fruits can be seen on exhibition, and most of the principal varieties of each. There are to be found on the tables: Choice bunches of grapes from New York, beautiful peaches

*Mexico, Canada, Honduras had fresh fruit exhibits. - Secretary.

from Arkansas, large limes from Arizona, excellent apples from Indiana and delicious oranges from California. This accounts largely for the smiles and pleasant faces of the visitors in the Palace, as there are thousands of specked apples, peaches, bananas and oranges given away daily to them by the generous exhibitors. Two large wine companies of New York State have grape juice "on tap," the revenue from which doubtless largely reimburses them for the expense incurred at the building, as many of the visitors enjoy sampling the juice.

Exhibits of fruits demonstrate the value and efficacy of the present cold storage system, which, as has been stated, has attained its high character within the past few years. Through a long line of experiments conducted by individuals, experimental stations, companies and the Department of Agriculture, covering many years of work and study, the present system has been perfected. So near has it become satisfactory that the fruit men can and are relying on its efficiency.

By this system the season of fruiting has been lengthened. Formerly perishable fruits lasted from a few days to a fortnight. Now, with proper care, the supply of such may be continued for weeks or months after picking.

This system avoids overstocking or glutting the market. It materially lessens the danger of a reduction in price, as they can be marketed as the demand may require, which not only protects the grower, but the merchant as well. The expense incurred in handling fruits either for fair display or marketing is not exorbitant, in fact, such goods can be handled and delivered without materially advancing the price to the consumer.

These exhibitions demonstrate the necessity of a proper selection of fruits. They should be sufficiently ripe and of typical color. Over-ripe specimens become mealy, scald more easily and "go down" or decay too soon. Those that are unripened never color properly and lack much of that characteristic flavor that is so much desired. When the specimens are of good size, free from insect ravages, scale and scab, properly matured and colored, they, during storage and after being placed on the tables, properly ripen and color and maintain their good qualities.

Some diversity of opinion exists relative to the time gathered fruits, such as apples, pears, quinces and apricots, should be placed in the packages for storage. Most men believe that but few days must elapse between picking and storing. Some advocate a sufficient length of time to permit such specimens to show evidences of decay, that would not otherwise keep well. The fruit is usually wrapped in two kinds of paper and packed. The inner wrapper is a tissue or soft one, the other an oiled or parchment paper. The name of the variety of fruit together with the name of the grower and his address is placed inside the inner wrapper.

In nearly every case, when apples and pears were kept in barrels,

those in the central part "heated" or decayed more or less, indicating that boxes should always be used, in bushel sizes and less, in which almost invariably the fruit kept uniformly throughout.

When boxes are removed to storage the temperature is then kept at near 32° to 34° Fahrenheit, which has proven most satisfactory. On the removal of the boxes from cold storage the lids are removed and the fruit is permitted to air at least eight hours before being removed from their places. This is done for two reasons. The specimens are said to sweat in warming up and the inner wrapping being a soft tissue paper, absorbs the moisture as fast as deposited, and the oiled wrappers keeps out the air.

Requisitions are given, usually once or twice a week, on the stock in cold storage, and the exhibits are thus maintained. In this way as certain fruits are needed they can be supplied in time to keep up a continuous exhibit.

When fruits are placed on the tables as many plates of five specimens each as can be secured of each variety that possess merit are selected and set aside to be passed on by the National Jury of Awards. There is an entry made to the Chief of the Division of these plates, when the jury is advised to inspect the same and file his or their decision for future reference. It might be said that Indiana was the only exhibitor that had its display in place in the Palace of Horticulture on the day of the opening of the fair, thus securing the first one hundred points in the grand contest for a medal offered by the division. The judges in their reports showed that Indiana had on exhibition the best plates of Wegener, Mann, Winesap and Newby apples yet shown.

These exhibitions directly indicate the keeping qualities of fruits. This is especially seen with the pomaceous and stone sorts, such as the apple, pear, quince, apricot, plum and peach. But as the staple kinds, such as apples and pears, are considered more in a commercial way, it is but natural that they should receive closer consideration. With the apples, the Salome, Fink, Winesap, Mann, Ben Davis, Northern Spy, Jonathan and Rome Beauty deserve special mention, as many samples of these varieties remained longest on the tables when taken from cold storage. It was found that the Grimes Golden, Wealthy, Stark, Fallawater and Yellow Bellflower retained much of their beauty and good qualities, but held up poorly when placed on the tables.

Among the pears late autumn and early winter varieties kept fairly well, yet it is a fact that the solid, firm, good-keeper Kieffer ruins in cold storage. It becomes black in color, insipid in taste, and worthless and rots quickly.

Most peaches are too tender to withstand the handling incident to packing and storage, and it is thought that they can not be kept satisfactorily for commercial purposes.

Grapes and quinces do fine if not too ripe, and as they add much to the fruit displays they are expected to enter largely in the consignments this summer and autumn that will be sent to the fair.

Citrus fruits, such as oranges, lemons, limes and pomelos have long since proven capable of withstanding the shipments with but little danger, and no labor and expense has been spared to make it one of the greatest displays ever given of these kinds of fruits.

National fairs furnish the best means of comparison and study of fresh ripe fruits, as the choicest specimens available are secured for such displays, and, laying aside those kept in liquids, no plan could be devised to be of greater value. In these opportunities for study not only the growers and merchants are interested, but the consumers as well. The chance to study the same variety grown on different soils, with a diversity of climate, moisture, protection and care, cultivation and spraying is there supplied. It was the intention of the government pomologist to have a series of tables where the same varieties grown in the several States could be placed under his direct supervision, and have careful comparisons made.

Many of the older varieties have not of late years been profitably grown and the exhibits of newer sorts is of great value to the public generally. New ones are being produced each year, and often valuable seedlings are lost by not being known or for want of an enterprising individual to introduce them. Some varieties that have been known for many years have of late attained much prominence in the commercial orchard and command much attention now.

In these exhibits the grower has an opportunity to advertise his business to the commercial fruit man by exhibiting what he can grow. In this way he can permit his fruit to be sampled, which is an evidence of its value, often convincing his friends of its unquestionable superiority.

With a knowledge of where certain kinds of fruits attain their greatest perfection commission men can arrange, often for weeks ahead, for the purchase of the products of entire orchards, which is of considerable importance to both shipper and grower, as in this case the fruit can be gathered and shipped when in prime condition, which is one of the essential requisites for its keeping and in the retention of its valuable qualities so highly prized by the consumer.

In concluding, it might be stated that through the aid of the cold storage system these international exhibits are made possible, and from the bulk and character of the fruits displayed there can be no doubt that the standard of excellence attained in the varieties thus grown at present is equal to any formerly produced, and, considering the extensive field of operations of horticulturists, there may be expected even greater possibilities in the broad and ennobling field of horticulture.

REPORT FROM SECOND HORTICULTURAL DISTRICT.

BY W. C. REED.

As to general conditions there seems to be considerable improvement in horticultural knowledge, so that the average farmer is paying more attention to spraying, pruning and other important items. However, it will be a long time before we will get all to spray and give their trees and plants the care they should have.

There has not been as much planting done in this locality the past year as there was the year before in fruits, but there is being planted quite a number of timber plats. These are mostly in lots of from 500 to 2,000 trees, and are planted mostly for posts. There has been at least 200,000 seedlings planted in this one county (Knox) the past season. Catalpa and black locust are the varieties planted. I think this one of the best moves that has been started for some time, and will be of great value to each farm in the course of a few years if they are properly cared for.

Fruit Supply.—There is not one farm in every ten that has enough tree or small fruits to supply his own family—in fact, there are a great many that have no small fruits whatever, claiming they can buy them cheaper than they can grow them, and they do without most of the time.

There are several commercial orchards in this section that have paid very well the past season. Among these are Hon. W. B. Robinson, who had one of the best crops he has ever raised on his twenty-five-acre apple orchard, this being his third consecutive crop. This orchard is thoroughly sprayed and pruned every year, and the clover mowed for mulch several times during the summer, being sandy soil with clay subsoil. There is also a twenty-five-acre pear orchard located partly within the city limits of Vincennes. This orchard has had five consecutive crops the past season. There were over 6,000 bushels of Keiffer and Garber pears. This has had only very moderate care and very little pruning, with some spraying. The trees have been very healthy from the start and commenced bearing very young. The third summer from setting 600 bushels of fruit were gathered. There are quite a number of commercial apple orchards around Bicknell, in the upper part of the county, which have paid very well, but as a rule they have had very little care, although this is one of the best apple sections of the State, especially for Winesaps and apples of that family.

Land in this section of the county can be bought for \$35 to \$40 per acre that is adapted to apples.

There is very little forward movement as to beautifying school grounds here as yet, but think the time is not far distant, as the country homes and grounds have been improved a great deal during the past few

years, and as a nurseryman I can notice a marked advance in the demand for roses, shrubs and ornamentals, all of which shows an awakening along that line. I think the Civic Improvement League is doing a wonderful work in this line, but so far there are no societies of this kind in this section.

I think the interurban railways are going to bring about more improvement than any other one agency, giving the rural population a chance to get out more and see how the people live in the cities, and, seeing the beautiful yards, they go home with a determination to fix up their own premises.

I think one of the best works that can be done by the Horticultural Society would be to give lectures in different parts of the State, these to be illustrated with stereopticon views of some of the best kept orchards, gardens and lawns.

REPORT FROM THIRD HORTICULTURAL DISTRICT.

BY C. N. LINDLEY.

There seems to be quite an advancement in horticulture in the counties of the Ohio Valley in small fruits. Floyd County does a wholesale business, many carloads being shipped each day during the berry season, from about May 15th till June 15th. Many orchards are being planted each year, as this section has proven exceptionally good for fruit of all kinds.

Farmers are not giving as much attention to fruits for home use as we would hope to see, as the impression seems to be that the care of an orchard or fruit garden interferes with the general farm work, and that often the fruit can be purchased cheaper than it can be produced at home.

There are quite a number of commercial orchards in the counties bordering the Ohio River, but I am unable to give names of the owners. Mr. Stevens, of Salem, President of the State Horticultural Society, has the largest pear orchard in the United States, comprising about ninety acres and over 11,000 trees. So far it has never borne a profitable crop, but we hope and expect to see a banner crop at no distant day. Mr. E. M. C. Hobbs, of Salem, has a mixed orchard of eight acres that is promising good returns, as the plums have yielded well and been profitable.

Land in this district suitable for fruit growing can be purchased from \$10 to \$50 per acre, and at these prices no doubt can be made to yield a handsome profit upon the investment.

A few good practical horticultural topics, to be discussed at the various Farmers' Institutes in this section, will create an interest along the line of both commercial orchards and fruits for the home.

ANNUAL REPORT OF NOBLE COUNTY HORTICULTURAL SOCIETY.

This society has now completed its eighth year and numbers 400 enrolled members. It held meetings during the year 1904 at the home of John D. Black in February; at the home of J. O. and Mrs. M. J. Good in April; at Rome City with the Lagrange County Society in June; at the home of J. C. Kimmell in August; at the home of George D. Gaby in November; at the home of John J. Forker in December. Five hundred persons were in attendance at the June meeting and 300 at the November meeting. We had an average attendance at all meetings of 200 persons. At each meeting some live subject in horticulture, agriculture or economic science was taken up and discussed. Occasionally the services of some speaker of prominence from a distance has been secured. Music, recitations and readings by the young people have filled out our programs.

The society dinners have formed a substantial attraction, enlarged our attendance and added to our membership. The cash premiums offered at its June, August and October meetings have served a good purpose. The show of fruits, vegetables and flowers at these meetings have been exceptionally fine.

A good average crop of fruit was grown here last year. An extra crop of vegetables was grown, onions forming the staple commercial crop.

The society exhibited fruits at the Indiana State Fair, and fruits, vegetables and flowers at the Kendallville Fair. We sent a delegate to the annual meeting of State Horticultural Society and one to the meeting of the State Board of Agriculture.

The financial report shows receipts for the year of \$476.00; expenditures, \$297.64, leaving a balance on hand of \$178.42. Our last annual report, of which 2,000 copies have been printed is a fifty-six-page book with handsome cover—in style and finish a model of the printer's art.

The following officers were elected for the year ensuing: J. C. Kimmell, Ligonier, president; Mrs. D. K. Hitchcock, Brimfield, vice-president; John W. Moorhouse, Albion, secretary; William W. Carey, Albion, treasurer; Executive Committee—George D. Gaby, P. J. Stanley and C. L. W. Harvey.

JNO. W. MOORHOUSE, Secretary.

FIFTEENTH ANNUAL REPORT
OF THE
Indiana State Dairy Association.

ANNUAL MEETING

HELD AT

State House, Indianapolis, Marion County,

JANUARY 19-20, 1905.

(Stenographic Notes by ELLA SHERA.)
Edited by H. E. VAN NORMAN, Secretary.

OFFICERS OF THE INDIANA STATE DAIRY ASSOCIATION.

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C. S. Plumb, Lafayette, Tippecanoe County.....	1891-1893
Bartlett Woods, Crown Point, Lake County.....	1893-1894
W. S. Commons, Centreville, Wayne County.....	1894-1895
C. S. Plumb, Lafayette, Tippecanoe County.....	1895-1896
O. A. Stubbs, Lewisville, Henry County.....	1896-1897
S. B. Woods, Lottaville, Lake County.....	1897-1898
J. J. W. Billingsley, Indianapolis, Marion County.....	1898-1899
C. B. Benjamin, LeRoy, Lake County.....	1899-1900
C. S. Plumb, Lafayette, Tippecanoe County.....	1900-1902
J. M. Knox, Lebanon, Boone County.....	1902-1903
Samuel Schlosser, Plymouth, Marshall County.....	1903-1903
D. B. Johnson, Mooresville, Morgan County.....	1903-

VICE-PRESIDENTS

Charles C. VanNuys, Franklin, Johnson County.....	1893-1894
J. M. Knox, Lebanon, Boone County.....	1894-1895
W. S. Commons, Centreville, Wayne County.....	1895-1896
Charles B. Benjamin, LeRoy, Lake County.....	1896-1897
O. P. Macy, Mooresville, Morgan County.....	1897-1898
G. W. Drischel, Cambridge City, Wayne County.....	1898-1899
J. V. Shugart, Marion, Grant County.....	1899-1900
J. M. Knox, Lebanon, Boone County.....	1900-1902
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I. B. Calvin, Kewanna, Fulton County.....	1903-

FIRST VICE-PRESIDENT.*

D. H. Jenkins, Indianapolis, Marion County.....	1891-1892
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SECOND VICE-PRESIDENT.*

Mrs. Kate M. Busick, Wabash, Wabash County.....	1891-1892
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THIRD VICE-PRESIDENT.*

C. B. Harris, Goshen, Elkhart County.....	1891-1892
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SECRETARY-TREASURER.

Mrs. Laura D. Worley, Ellettsville, Monroe County.....	1891-1893
W. S. Commons, Centreville, Wayne County.....	1893-1894
H. C. Beckman, Brunswick, Lake County.....	1894-1897
C. S. Plumb, Lafayette, Tippecanoe County.....	1897-1898
H. E. Van Norman, Lafayette, Tippecanoe County.....	1898-

OFFICERS AND MEMBERS OF THE INDIANA STATE DAIRY
ASSOCIATION FOR 1905.

OFFICERS.

President, D. B. Johnson, Mooresville.

Vice-President, I. B. Calvin, Kewanna.

Sec.-Treas., H. E. Van Norman, Lafayette.

EXECUTIVE COMMITTEE.

D. B. Johnson, I. B. Calvin, H. E. Van Norman; A. W. Antrim,
Indianapolis; J. M. Knox, Lebanon.

*In 1893 the offices of first, second and third Vice-Presidents were abolished.

MEMBERSHIP LIST.

ANNUAL MEMBERSHIP.

The following persons have paid one dollar into the treasury for 1905 membership or made an exhibit at last annual convention:

<i>Name.</i>	<i>Town.</i>	<i>County.</i>
Adams, T. C.	Akron, Ohio	
Amboy Creamery Co.	Amboy	Miami.
Anthony, Rudolph	Columbus, Ohio	
Beeler, Jos. E.	Zionsville	Boone.
Benjamin, C. B.	Crown Point	Lake.
Benton, G. A.	Chicago, Ill.	
Berg, C. L.	Mishawaka	St. Joseph.
Blood, F. J.	Chicago, Ill.	
Boyd & Drischel	Cambridge City	Wayne.
Brag, C. L.	Valley Mills	Marion.
Burnside, T. C.	Liberty	Union.
Calvin, I. B.	Kewanna	Fulton.
Carter, Mrs. O. E.	Seymour	Jackson.
Chamberlain, J. E.	Lafayette	Tippecanoe.
Christian, T. E.	Kokomo	Howard.
Collier, W. L.	Anderson	Madison.
Comfort, J. E.	Louisville, Ky.	
Compton, A. H.	New Carlisle	St. Joseph.
Covert, J. G.	Franklin	Johnson.
Davis, C. E.	Camden, N. Y.	
Day, E. H.	Carmel	Hamilton.
Deweese, W. L.	Plainfield	Hendricks.
Dixon, O. J.	Carmel	Hamilton.
Doud, B.	Chili	Miami.
Dungan, Sam	Indianapolis	Marion.
Ellison, A. W.	Ft. Wayne	Allen.
Fisk, W. W.	St. Clair, Mich.	
Freese, Geo.	Nappanee	Elkhart.
Freese, Edw.	Nappanee	Elkhart.
Furnas, R. W.	Indianapolis	Marion.
Garretson, N. H.	Pendleton	Madison.
Gish, H. E.	Abilene, Kan.	
Hack, J. M.	Crownpoint	Lake.
Heller & Merz	New York, N. Y.	
Hemenway, H. E.	Zionsville	Boone.
Henley, E. E.	Straughn	Henry.
Holderman, C. E.	Bremen	Marshall.
Holderman, J. M.	Plymouth	Marshall.
Holloway, Silas	North Manchester	Wabash.
Hursh, J. W.	Ft. Wayne	Allen.

<i>Name.</i>	<i>Town.</i>	<i>County.</i>
Jamison, John	Philadelphia, Pa.	
Jes-up & Antrim	Indianapolis	Marion.
Johnson, H. V	Mooreville	Morgan.
Johnson, T. B.	Indianapolis, Sta. A.	Marion.
Johnson, C. A.	Acton	Marion.
Keilsmeier Bros.	Manitowoc, Wis.	
Kester, H. L.	Middletown.	Henry.
Kiltz, F. W.	Kalamazoo, Mich.	
Knox, J. M.	Lebanon.	Boone.
Lamont, Mrs. Chas.	Mooreville	Morgan.
Lamont, Chas.	Mooreville.	Morgan.
Lennick, Frank	Hanna	Laporte.
Lisman, C. W.	Carlisle.	Sullivan
Macy Bros.	Mooreville.	Morgan.
Martin, E. L.	New Carlisle	St. Joseph.
McClellan, T. E.	Tipton	Tipton.
McConnell, C. M.	Woodstock, Ohio.	
McConnell, J. E.	Milford Center, Ohio.	
Miller, C.	Indianapolis.	Marion.
Millikan, C. R.	New Castle	Henry.
Mills, O. H.	Mooreville	Morgan.
Mitchener, E. P.	Chicago, Ill.	
Newby Herbert	Spiceland	Henry.
Newhouse, H. M.	Waverly.	Morgan.
Newsom, A. J.	West Newton	Marion.
Penrod, J. F.	Kewanna	Fulton.
Pratt, S. T.	New York, N. Y.	
Reese, Horace.	Plainfield.	Hendricks.
Richmond Cream Co.	Richmond	Wayne.
Riphey, Mrs. Sophie	Syracuse	Kosciusko.
Roberts, W. H.	Malott Park	Marion.
Rondebush, C. E.	Colfax.	Clinton.
Sedgewick, Riley.	Fairland	Shelby.
Shalliol, C. D.	Mishawaka	St. Joseph.
Schenck, Mrs. M. B.	Lebanon.	Boone.
Shepard, W. P.	Madison, Wis.	
Schlosser, Gus.	Chicago, Ill.	
Schlosser, Ray	Plymouth.	Marshall.
Scott, W. D.	Richmond	Wayne.
Shugart, J. V.	Marion	Grant.
Slater, H. N.	Lafayette	Tippecanoe.
St. John, A. W. F.	Columbus Ohio	
Strawinski, J. F.	Indianapolis	Marion.
Smith, Frank	Valley Mills	Marion.
Smith & Co., F. P.	Indianapolis	Marion.

<i>Name.</i>	<i>Town.</i>	<i>County.</i>
Strowhiner, W. E.	Marion	Grant.
Swan, G. P.	New Washington	Clark.
Thomas, L. W.	Elizabethtown	Bartholomew.
Trafalgar Creamery Co.	Indianapolis	Marion.
Van Norman, H. E.	Lafayette	Tippecanoe.
Wagoner Glass Works	New York, N. Y.	
Webster, W. B.	Indianapolis	Marion.
Welborn, J. M.	Bridgeport	Marion.
Wilson, D. W.	Elgin, Ill.	
Wilson, W. N.	Indianapolis	Marion.
Winters, Q. R.	Linton	Greene.
Woods, S. B.	Crownpoint	Lake.
Woolen, G. V.	Indianapolis	Marion.
Wright, Geo. W.	Indianapolis	Marion.

LIFE MEMBERS.

Boyd, Jas. A.	Cambridge City	Henry.
Commons, W. S.	Centreville	Wayne.
Dri-chel, G. W.	Cambridge City	Henry.
Ellison, T. E.	Ft. Wayne	Allen.
Plumb, C. S.	Columbus, Ohio	
Schlosser, Henry	Bremen	Marshall.
Schlosser, Samuel	Plymouth	Marshall.

HONORARY MEMBER.

Plumb, C. S.	Columbus, Ohio
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INDIANA CREAMERIES.

The following list is based on information at hand since July, 1905. Request for information was sent to each creamery in the State so far as addresses were at hand. Most of them responded. Frequent requests for names and addresses of creameries and cheese factories in the State are received by the Secretary, and it is hoped that those interested will kindly inform him of errors and omissions in this list as well as of the establishment or abandonment of any establishments.

CREAMERIES AND CHEESE FACTORIES.

<i>Postoffice.</i>	<i>County.</i>	<i>Manager or Secretary.</i>	<i>Butter or Cheese Maker.</i>
*Amboy	Miami	G. M. Yoars	Frank A. Gold.
Angola	Steuben	C. W. Hood	C. W. Hood.
Anderson	Madison	Larmore Bros.	Larmore Bros.
		W. L. Collier	Chas. Silverthorn
*Arcadia	Hamilton	Henry Waltz	Henry Waltz.
Armstrong	Vanderburgh	J. W. Kneer	J. H. Muser.
Avilla	Noble	Thos. Hudson	E. E. Gates.
Blountsville	Henry	O. F. Hodson	O. F. Hodson.

<i>Postoffice.</i>	<i>County.</i>	<i>Manager or Secretary.</i>	<i>Butter or Cheese Maker.</i>
Bremen	Marshall	Schlosser Bros.	C. E. Holderman.
Bristol	Elkhart	Sol. Sherwin	Edward Nickerson.
Brunswick	Lake	A. Schmal	Hans Sedler.
Butler	Dekalb	J. B. Pessell	J. B. Pessell.
*Cambridge City	Wayne	G. W. Drischel	Geo. Usher.
Carlisle	Sullivan	J. W. Cooper	C. W. Lisman.
Centerville	Wayne	A. L. Lockridge	J. H. Rohe.
Churubusco	Whitley	Leco Isay	C. E. Renberger.
Chrisney	Spencer	E. Mair	Chas. Atkinson.
Columbia City	Whitley	F. L. Meyers	
Creston	Lake	John Schultz	John Hoffman.
Crownpoint	Lake	Adolph Lottes	E. D. Strong.
Dale	Spencer	M. Heichelbeek	Otto Eberhardt.
Decatur	Adams	Brown & Son	Isaac Brown.
Deedsville	Miami	S. F. Robins	C. Wildman.
Degonia	Warrick		
Delphi	Carroll	D. N. Dane	
Dyer	Lake	F. Kalvelago	John B. Bruescher.
Eekarty	Crawford	H. N. Sturn	Geo. J. Lynch.
Farmersburg	Sullivan	R. J. Cummins	H. E. Bennett.
Farmland	Randolph	C. H. Coats	C. H. Coats.
Ferdinand	Dubois	J. Schneider	Chas. Metzgar.
Fountain City	Wayne	R. B. Page	Peter Cutler.
Ft. Wayne	Allen	A. F. Naylor	Curtis Parks.
Freelandville	Knox	F. H. Kruger	Fred Finck.
Fremont	Steuben	J. H. Stroh	A. B. Daily.
Hanna	Laporte	J. H. Jordan	Frank Lenick.
Hamilton	Steuben	W. Netz	W. Netz.
Hebron	Porter	B. F. Nichols	B. F. Nichols.
Holland	Dubois	J. Hutman	C. S. Graves.
Huntingburg	Dubois		
Huntertown	Allen	C. L. Greenwell	D. D. Dennison.
Inglefield	Vanderburgh	Thos. W. Peck	Frank W. Fisher.
Jamestown	Boone	A. M. Southwick	A. M. Southwick.
Jasper	Dubois	L. H. Sturm	A. Medler.
Knox	Starke	C. Rallings	
Kewana	Fulton	Clifford & Penrod	J. T. Penrod.
*Kingsbury	Laporte	H. H. Lurg	J. A. Ensign.
Kokomo	Howard	Thos. E. Christian	Fred Robinson.
Lamar	Spencer	T. M. Thorn	J. J. Stomm.
Lafayette	Tippecanoe	Chamberlain & Son	
		Purdue Univ. Creamery	F. Rasmussen.
Liberty	Union	G. S. Laffan	Perry Johnson.
Lima	Lagrange	E. D. Craig	Scott Wylie.
Logansport	Cass	C. W. Arnold	H. Meyers.
Mishawaka	St. Joseph	C. D. Shalloil	Herbert Schlosser.
Modoc	Randolph		Lawrence Grubbs.
Mulberry	Clinton	A. H. Ballard	
Muncie	Delaware	Geo. W. Brooks	B. L. Hollister.
		Fowler Co.	
		G. W. Brooks	B. L. Martin.
Napanee	Elkhart	Geo. Freese's Sons	
New Carlisle	St. Joseph	A. H. Compton	Earl Martin.
New Castle	Henry	Colson S. Berry	Levi Johnson.
*New Washington	Clark	G. P. Swan	

*Cheese factories.

<i>Postoffice.</i>	<i>County.</i>	<i>Manager or Secretary.</i>	<i>Butter or Cheese Maker.</i>
North Manchester.....	Wabash.....	Silas Holloway.....	Silas Holloway.
Orland.....	Steuben.....	G. M. Rowley.....	D. L. Coover.
Osceola.....	St. Joseph.....	C. M. Curtis.....	John Enger.
Osgood.....	Ripley.....	G. Herman.....	G. Herman.
Paoli.....	Orange.....	R. W. Maris.....	Frank Libeke.
Pendleton.....	Madison.....	John Right.....	L. C. Chamberlain.
Plymouth.....	Marshall.....	Sam Schlosser.....	J. M. Holderman.
Princeton.....	Gibson.....		
Parker.....	Randolph.....	S. Supler.....	
Portland.....	Jay.....	L. G. Holmes.....	Oscar Warnock.
Rochester.....	Fulton.....	F. S. Bryant.....	J. A. Goodnow.
Rockport.....	Spencer.....	B. F. Bridges.....	Joseph Schuhardt.
Rosston.....	Boone.....	C. A. Beery.....	C. Brayhorn.
Sheridan.....	Hamilton.....		
Spiceland.....	Henry.....	L. O. Draper.....	
St. Philips.....	Posey.....		John Mingle.
Straughn.....	Henry.....	E. E. Henly.....	H. W. McGrath.
Sullivan.....	Sullivan.....		W. S. Landis.
South Whitley.....	Whitley.....	A. V. Holloway.....	A. V. Holloway.
Topeka.....	Lagrange.....	H. W. Zook.....	E. E. Zook.
Trafalgar.....	Johnson.....	Frank Hellerick.....	Frank Hellerick.
Troy.....	Perry.....	A. M. Baker.....	L. F. Bingaman.
Union Mills.....	Laporte.....	John Burch.....	John Burch.
Valparaiso.....	Porter.....	S. E. Rigg.....	Chas. Morrow.
Vincennes.....	Knox.....	Frank Primus.....	G. B. Riley.
Wanatah.....	Laporte.....		
Webster.....	Wayne.....	A. L. Lockridge.....	Wm. Wilcooper.

ICE CREAM FACTORIES AND MILK PLANTS.

<i>Postoffice.</i>	<i>County.</i>	<i>Firm Name.</i>	<i>President or Manager.</i>
Anderson.....	Madison.....	Indiana Dairy Supply Co.	W. L. Collier.
Berne.....	Adams.....		M. A. Neuensch'nder.
Columbia City.....	Whitley.....	Columbia City Cr'y Co.	F. L. Myers.
Connersville.....	Fayette.....	Connersville Ice Plant...	
Delphi.....	Carroll.....	Delphi Ice Cream Co.	D. N. Dane.
Elwood.....	Madison.....		O. Brumbaugh.
Ft. Wayne.....	Allen.....	Mandamin Meadows C.CoT.	E. Ellison.
Indianapolis.....	Marion.....	American Cond. Milk Co.	
		W. H. Ballard.....	
		R. L. Furnas.....	
		Indianapolis Cream'y Co.	Frank Jackson.
		Jessup & Antrim.....	
		Polk Sanitary Milk Co.	Sam O. Dungan.
		Putnam Creamery Co.....	
Lafayette.....	Tippecanoe.....	Chamberlain & Son.....	John Chamberlain.
		D. M. Herrin & Co.....	D. M. Herrin.
Muncie.....	Delaware.....	Brooks Creamery Co.....	Geo. W. Brooks.
		Fowler & Co.....	
		Hinckley Ice Cream Fac.	C. E. Hinckley.
New Albany.....	Floyd.....	Wm. J. & Geo. Goodbut.	
Sheridan.....	Hamilton.....	Ind. Condensed Milk Co.	
Valparaiso.....	Porter.....	J. Foster.....	
Wabash.....	Wabash.....	A. S. Gilman.....	
Wolcottville.....	Lagrange.....	Amos Gipe.....	
		H. L. Taylor.....	
Richmond.....	Wayne.....	Richmond Cream Co.....	C. C. & H. J. Commons.

ARTICLES OF ASSOCIATION OF THE INDIANA STATE DAIRY ASSOCIATION.

(As amended December 7, 1899.)

Article 1. The name of this Association shall be "The Indiana State Dairy Association."

Art. 2. The officers of this Association shall consist of a President, Vice-President and Secretary-Treasurer, and an Executive Committee, consisting of the President, Vice-President, Secretary-Treasurer and two others elected by the Association. The Secretary is authorized, whenever necessary, to employ an assistant secretary of his own appointment, to assist at the annual meeting, who shall be paid for his services as the Executive Committee may decide. A committee of two, to audit the Secretary-Treasurer's accounts, shall be appointed by the President at each annual meeting.

Art. 3. The officers shall be elected to serve one year, or until their successors have been elected.

Art. 4. The regular annual meetings shall occur at such time and place as may be designated by the Executive Committee, or by majority vote of the Association at the annual meeting.

Art. 5. Any person can become a member of this Association for one year by the payment of a fee of one dollar. Upon the payment of ten dollars, a person may become a life member. Honorary members not to exceed five may be elected, but said election is not to hold for over two years, excepting by re-election.

Art. 6. The President shall have power to call a special meeting at such time as in his judgment the interests of the Association demand.

Art. 7. The Executive Committee shall have power to transact all unfinished business.

Art. 8. The Treasurer shall be the custodian of all the funds belonging to the Association, and pay out the same on the order of the President. The Treasurer shall also furnish sufficient bond, as determined by the Executive Committee, to guarantee all moneys owned by the Association, handled by him, the said bond to be deposited in such national bank as may be designated by the Executive Committee.

Art. 9. The officers of this Association shall perform such duties as usually devolve upon officers of similar organizations.

Art. 10. The President and Secretary shall each be allowed out of the general fund an amount equivalent to their actual expenses while attending Association meetings. When the Association receives State aid the Treasurer is authorized to meet the expenses of the Executive Committee in all cases of called meetings where executive business is transacted.

Art. 11. These articles may be amended by a majority vote of the members of the Association present.

FIFTEENTH ANNUAL MEETING OF THE INDIANA STATE DAIRY ASSOCIATION.

THURSDAY MORNING.

January 19, 1905.

The Fifteenth Annual Meeting of the Indiana State Dairy Association was held in the Supreme Court Room, State House, second floor, Indianapolis, Indiana, beginning Thursday morning, January 19, 1905, with President D. B. Johnson in the chair, who opened the meeting as follows:

D. B. Johnson: Ladies and Gentlemen—It is now time for us to begin the proceedings of this convention. We have run a little over time purposely to allow a great many of the dairymen to get up and get their cows milked, they had this to do, before they came, and get to the convention at the beginning. We have lost half an hour in this way and we should like, if possible, to make this up between now and 12 o'clock. Before proceeding any further I shall appoint a committee to escort our Governor to this room so that he will be here when the time comes for him to deliver his address. I shall appoint Dr. W. N. Wilson and H. E. Van Norman on this committee.

Invocation by Dr. Pierson of Indianapolis.

President Johnson: I will ask Mr. Calvin, the Vice-President, to take the chair until I have read my paper.

Chairman Calvin: We will now have the

PRESIDENT'S ADDRESS.

D. B. JOHNSON, MOORESVILLE.

Ladies and Gentlemen of the Fifteenth Annual Convention of the Indiana State Dairy Association—I am glad to stand before so large a number of dairy and factory men of the great State of Indiana.

We are assembled together these two days to consider questions that are of vital interest to all of us. These subjects that are of so much importance to us it seems to me can not be thoroughly discussed in any

other way than in these meetings, where many are so directly interested and are in such close touch as the dairymen and factory men. Whatever affects one affects the other. Again, by this annual gathering we can call to our help the best talent the country has, and thereby keep in touch with the best dairy knowledge.

While Indiana is not the largest State in the Union, there is no State any better situated geographically. And I think I am safe in saying that we grow as good grass or corn, wheat, oats and hay as can be grown anywhere. Our water privileges are excellent. Our climate is good. We have a large manufacturing and mining interest, hence a good home market for a large amount of dairy products. We are centrally located with good markets all around us, and our network of railroads puts us in quick touch with the best markets of the country.

There is no other line in the economy of the farm that is better adapted to building up the fertility of the soil than the farm dairy, by being able to feed all the grain and roughage and convert it into a finished product. It takes but very little plant food with it. As a result practically all the plant food is left on the farm to be used to grow more crops to feed more cows. The conditions are near to the "ideal farming." That is to farm forever on the same piece of land and that land to get better each year. The increased productiveness of our farms means better and more permanent improvements, better fences, better barns, better houses, better cows, wear better clothes, drive better horses, give our children a better education, build better school houses and better churches, and in fact help to meet all the conditions to make better citizens. It is a fact that when you strike a dairy community the outward evidences of thrift are plain to be seen on every hand, as I have indicated.

We do not make as much butter and cheese as some States, but statistics show that we are coming to the front. Over 90 per cent. of the farms report sales of dairy products. We have about 105 working creameries. The value of the cows kept for milk is \$18,285,000. The value of farm property devoted to the dairy is \$28,181,000. The value of our dairy products amounts to over fifteen and a half million dollars per year. Now the present standing of the dairy interests is very good. We are making a lot of good butter; we are making a lot of tolerably good butter, and a very large per cent. of poor butter. Are we going to be satisfied with the present conditions, and let well enough alone? Or shall we strive to change these conditions, so that our output will be a very large per cent. of good butter, and a very small per cent. of the other two classes?

In order to increase the dairy products that our dairy interests may grow not only in the number of pounds, but in an increase in price, it is absolutely necessary to put upon the market a better quality. I believe these two words, "better quality," sound the keynote for the

gathering of this convention these two days that we might confer together with the sole thought of being able when we go back to our farms and factories to produce better milk, cream and butter, and that means an increased consumption and a better demand, and a better price. In visiting a number of creameries my observation has been that these factories are conducted along well-defined business lines, making the best possible product with the equipment and material at hand. My own personal experience convinced me years ago that the man that feeds the cows, milks and cares for the product.

In addition to the educational influences at work in our State, the Agricultural College, the Experiment Station, the Dairy Association and the agricultural literature, the leading States are sending men into the field to instruct the buttermakers in the application of these principles which long and careful experiments have shown are the basis of the most successful buttermaking. They are sending men to farms to investigate the kind of cows kept, returns secured from them, feeds used, and from this data are showing the farmers how to increase the profit on the cows he is keeping, whether they be few or many, and how to improve the quality of their output.

In spite of the help to be secured from literature, the men who most need the work which has been done are the ones least apt to turn to the helps that are available. The history of the educational work in New York State shows that very profitable returns have been secured from carrying the work of education to the farmer by means of such investigation as is suggested above, and by demonstrative experiments carried on in communities in different parts of the State. The neighbors will learn from such experiments more accurately than from the printed page.

Minnesota, as a result of this class of work among her buttermakers, has secured a large proportion of the prizes at the recent exhibit at St. Louis. The Dairy Commissioner of that State estimates from carefully compiled data that the premiums above market quotations received on Minnesota butter by creameries which have heeded the suggestions of the field instructors has amounted to over \$1,000,000 since the system was first started some three or four years ago.

I believe the time has come when the dairy interests of Indiana will justify at least a beginning of this character of work, and that the Dairy Association can in no other way forward the interests of conservative dairying as by the use of their best efforts in securing the field investigation and instruction in the creameries and dairy farms of the State.

In compliance with the instructions of the last convention, our legislative committee has succeeded in securing the help of the State Live Stock Breeders' Association and Corn Growers' Association in an effort to secure funds for this and similar work with corn and live stock. A report of the progress will be submitted by the committee.

In conclusion, I would urge every member of this Association to post himself on the work of the joint committee from this Association, the Live Stock Breeders' Association and Corn Growers' Association. To then write at least a postal card to his Senator and Representative and urge their aggressive co-operation in securing this legislation. I would further urge every member to talk with his neighbors irrespective of whether they are interested in the dairy or in the work contemplated, which will result in profits to every class of farming in the State. Therefore every farmer should be vitally interested in making it possible to undertake the work proposed.

The farming interests of the State pay a very large proportion of the taxes (nearly five-sixths), and if they really want the work done, a definite expression of their wishes will go very far toward making it possible of accomplishment.

President Johnson: I now have the pleasure of introducing to you Governor Hanly, who will deliver an address of welcome.
(Applause.)

GREETINGS.

GOVERNOR HANLY.

Mr. Chairman, Ladies and Gentlemen—I came here under contract that I was not to make a speech. I was only to say a word of greeting to you. I am glad to have the pleasure of meeting so many members of this Association. I am glad to meet you personally and to have an opportunity to express something of the interest that I have in the subject which brings you together. Indiana has become a great State; great in her commercial interests; great in her manufacturing interests; great in her commercial interests; great in her transportation interests; great in her manufacturing interests; great in her educational interests, and in her benevolent institutions. Of these facts all citizens of Indiana are justly proud. But all of these things of which I have just spoken rest upon another class and kind of wealth, and a different class and kind of population. They all rest upon the farmer—the agricultural interests of Indiana. Every railroad, every manufacturing establishment, every commercial enterprise, the great educational and benevolent institutions rest on the agricultural interest. That is their basis. Then whatever tends to make two blades of grass grow where but one has grown, or two stalks of corn where but one has grown, or two bushels of grain where but one has been produced, or two pounds of dairy produce where yesterday there was but one, tends to increase Hoosier wealth, Hoosier influence and Hoosier happiness and Hoosier enjoyment. I think I might be pardoned, ladies and gentle-

men, if I add these words. I have sometimes said them before, and I will say them now because I believe them. There is in Indiana no other as safe a population, no other as true and tried, or as steadfast in its loyalty and education to the institutions that have made the State great, and the country great as the agricultural population of Indiana. There is something in the stars and skies at night; there is something in the sun rising; there is something in the singing of the birds; there is something in the budding flower and the full blown rose; there is something in nature that helps men to a better, nobler and truer life. The streams of life in great cities sometimes become corrupt, but the life that develops in the agricultural district is usually clean, wholesome and pure. I believe this to be true.

It is a pleasure for me to talk to you today, and I wish to say to you, ladies and gentlemen, that if there is anything that I can do for you, consistent with my public obligation, I will gladly do it, believing I am serving the State and the best interests of all of the people of the State.

More than this I have not time to say. I thank you sincerely for your courtesy. You are all welcome at the executive offices at any time. Good-bye.

President Johnson: We will have the response by J. M. Knox, of Lebanon, Indiana.

RESPONSE.

J. M. KNOX.

Mr. President, Ladies and Gentlemen I am sorry you let the Governor get away. There was something in that man's face, not only in his words, that was a greeting. That was a noble face and a face that was full of greeting and a face that means more than simple words: a benevolent face, and I am sure this man will do a great deal for Indiana.

I am glad to express my regards for the Governor, and I am also glad that Indiana is such a great State and has so good a Governor, and in another word I am glad that the Governor has so good a State as Indiana to preside over.

I did think that I would make a speech, and I had one, but Brother Johnson stole it from me. But there is one word that I wish to say here while we are seeking knowledge and learning one of another, we want to bear in mind that Indiana is today the dumping ground of all the frauds that we have, and God knows there are plenty of them at the present time. We have a pure food law but it is not in force, because we do not have the means to detect these frauds, and I hope the Representatives and Senators will proceed to give us the means for enforcement of this law if they do not do another thing.

In Lafayette we have Purdue University Experiment Station, which has never been recognized by the State. The State has not given a dollar to the support of the Experiment Station, and we feel that at least it should give a good appropriation to the three interests that Brother Johnson spoke of in connection with the Purdue University Experiment Station, that there might be general work and better work, and a higher grade and order of work than we have. In coming here we leave our home duties. We are here for information and we are here for a good time. I am proud to stand before you and state that I have been at every meeting of the Dairy Association for fourteen years. I have a kind of a tendency to hang on to things that are good just as long as I can. I feel younger today than I did fourteen years ago: I feel more like learning; I feel more my weakness. The field of dairy work that I am in is wonderful. We are in our infancy today as to what may be accomplished. We are not living up to our opportunities, and I hope each one of us will gather things from this meeting which we can take home with us that will be of lasting value.

Now, I am glad to thank the Governor in his absence for his greeting. I thank the dairymen who have honored us with their presence, and I thank you for your indulgence.

(Applause.)

THE MARKET OUTLOOK.

D. W. WILLSON.

Elgin Dairy Report.

Mr. President, Ladies and Gentlemen—I come here this morning at the invitation of your Secretary to say a few words along lines that it seems to me are quite important. My talk will be along the lines of the President's talk, and that is the marketing of our produce. The raising of the product, or the making of it is all right, but the marketing of it is a consideration that requires a great deal of thought and skill to enable one to know how to get the best out of it.

Your Governor made one remark which I wish to take exception to. He said that we were accomplishing what we should accomplish if we made one blade of grass grow that had not been growing, or made two stalks of corn grow where one had been growing, and so on. Now I think it is more important today for the farmers and the tillers of the soil to get a good price for their produce than it is to make more of it. If there is a large crop of corn what will these great combinations do? They immediately bear the price of the corn down until they get possession of it and then raise it up and sell it at their own price. What about the beef and meat trust? They buy at the lowest price, bear the market

down, but when we want to buy beef they stick the price up to 25 and 30 cents a pound. It seems to me that these things should be different. Of course we do not have very much to do with these things, but they are facts, and they are a detriment and always will be to the good dairy producer.

The great trouble, as our President said, is that we are at the wrong end of the procession. There is a small amount of good, a large amount of fair, but a whole lot of bad dairy produce. The object of this Association is to put these things the other way—a large amount of good, moderate amount of fair, and a small amount of bad. Now then, how are you going to do that? The education part of this Association has had this matter in hands for years and they hope to get the assistance of the Legislature in getting men trained in that work to visit the factories, to visit the farms. That is the way in which they hope to change things. Right here in your city you do not have to pay much more for good milk; the milk produces better cream; and really it is a good deal more appetizing to know that you are getting cleaner milk, and that the milk when it comes to your place has not been subjected to anything to give it either a bad flavor or an unwholesome taste. This is the market end of it. The people eat more; they would drink more milk, eat more butter. If you dairymen understand your business you will know that your most important point is quality. That is what makes the price today. Today the price of butter is high. It is 30 cents a pound on the market, and how much of that butter can you find on the market in Chicago or New York, or any other large receiving center? I am sorry to say a very small proportion. When you find butter that you can buy for 30 cents a pound you will find butter that will grade from 93 to 96, according to the standard of grading of butter. I am not just sure of this, but think you will have to pay 30½ or 31 cents for the general run of fancy creamery butter. What is the reason that butter is so high today. There is not enough good butter made. That is all there is to it, Mr. President, and yet the farmer thinks because he has four or five or six cows he knows how to make good butter like grandmother used to make. He thinks he has quite a dairy with this many cows. The market today demands butter that is better than grandmother used to make, although I don't think we get a great deal of it. Some of our grandmothers made better butter than some of the creameries do today. It seems to me that the butter and bread used to taste sweeter than they do now. It does not taste as good to me now as it did when I was a boy ten or twelve years old.

How are we going to improve the quality of our butter?

Now, Mr. President, I had a nice paper written. Possibly I had better read from it:

Your Secretary asked me to discuss the market outlook before your Association; and it seems as if there was but little to say, especially if

we should consider the topic from the standpoint of our and your immediate locality. It might be well to take a broader and more liberal view of the industry, and as a beginning in that direction, I will give you some facts and figures from the census of 1900. These pertain to the whole country; and from them you may be able to get an idea of the value and importance of the dairy industry, and what it means to the men engaged in it, and to the business and commercial world.

The number of farms on which dairying is practiced, 4,514,210. The number of cows kept for dairy purposes, 18,112,797. Butter made on the farms, 1,071,745,127 pounds. Butter made in factories, 420,112,546 pounds. Total pounds of butter produced, 1,492,699,140. The proportion of butter made on the farms 71.9; made in factories 28.1.

The total value of the dairy products of the country according to the census, \$563,188,850. These are large figures. We can scarcely comprehend what they mean.

Now what have all these figures to do with the market outlook? Very much indeed. The quantity of an article produced determines very frequently in a large degree its value. However, that is not the case so largely in butter and other dairy products. Their value depends more particularly upon their quality. It is an axiom that holds good in relation to all dairy products, that the quality determines the demand. Good milk, good butter, good cheese, are always in demand at good prices. The other sort sometimes sells, sometimes goes a begging, and is never satisfactory to either the dealer, the maker, or the consumer.

Taking a broad view the country over, it is admitted by all who are given to figuring, that the demand for fine dairy products has grown in the last ten years faster than the supply; and there has been a general tendency towards higher average prices for first-class dairy products. This tendency naturally brings up the question, if the increased supply will not be found to meet the demand. In the general history of the dairy industry, this has only been true to a certain extent.

During the past ten or fifteen years, a new element has entered into the butter trade, purely speculative, which consists in buying June butter, or butter when it is cheap in the summer time, putting it in the refrigerators, holding it until the shortage in the make occurs, then putting it on the market as fresh, if possible, or, if not, simply as fancy creamery butter. This has had a tendency to equalize prices between the flush and short make, and has resulted in a more uniform range of values during the year. This has also been the practice with cheese, so that summer and winter prices both of butter and cheese have remained more uniform.

When it comes to milk and cream, that are now becoming such important factors in connection with the dairy industry, they are an everyday production; and everyday consumptive trade absorbs them. And here as in other lines, quality determines the amount used. Therefore the market outlook for pure, wholesome milk and cream is good. No!

There is not likely to be an oversupply. Here is a branch of industry that the dairymen of Indiana could engage in very profitably and to the advantage and delight of the residents of your many large cities and towns. In no other specialty of dairying is the market outlook so good. The public are being educated to the fact that there is no one article of food of so much value as pure, wholesome milk.

You will excuse these digressions, as it were, on general dairy topics, but they all have a bearing and an important one, too, on dairy markets. It is my belief, and that of many other persons who have opportunity to judge of the situation, that it is only by careful education, and developing of better dairy methods, that the dairymen of the country will be able to supply the demand, unless at prices beyond the reach of the ordinary people.

The number of persons financially able to pay 15 to 20 cents a quart for milk and 50 cents for cream, 50 cents to \$1 a pound for butter, are comparatively few; and yet those prices are paid now, and have been paid for the dairy products named for years. The dairymen supplying these products at these extravagant figures, so it seems, are getting good returns for their investment. But the market has not yet developed enough along those very high lines to warrant the ordinary dairyman undertaking that practice.

We must be content, therefore, with producing the very best article that will go into consumption in the general market; butter that will grade, according to the commercial standard, not less than 90 points; cheese the same, and milk with an average fat percentage of 4 pounds to the hundred, not to exceed 10,000 bacteria per cubic centimeter. For these products there will always be a demand sufficient to give to the dairyman a profit for his labor of 50 per cent., provided he produces the milk at the lowest possible cost.

That part of the dairy industry will be brought out by other speakers. I may say, right here, that many people believe the dairymen have more to fear from the large amount of poor butter produced, than from the competition of oleomargarine. One of the largest operators on the Elgin Board of Trade said to me a few days ago that 90 per cent. of the butter in the ordinary market would not grade extra. I disagreed with him, but he may be correct; but the fact remained, nevertheless, that the proportion of fine butter is not what it should be, considering the work of organizations like this Association, the dairy schools, dairy and creamery newspapers, and the very many kinds of dairy instruction that have been provided so freely. I am somewhat of an optimist in regard to these matters, and believe there are better times coming both for the producers and consumers of dairy products. For the producers when they shall have learned how to produce a large amount of the best grade at a profit; for the consumers when they shall be able to secure a supply of fine goods at reasonable figures.

We do not know of any State that is better situated for finding a market for its produce than is Indiana today. You are here in a city where every kind of goods is manufactured, and you will not have to send your dairy produce so far away in order to find a market for it. There are also a number of large cities surrounding Indiana. There are Cincinnati, Louisville and Chicago, and some others. Then you have a good market at home. I wish I had a million farmers to impress it upon them that they have a good market in Indiana, not only for dairy produce but for anything that is raised on the farm. I do not believe that the proportion of farmers here today is very large, for they don't look to me like they had milked the cows before they came here this morning.

President Johnson: You can't always tell by their looks, Mr. Wilson. For this man's benefit I should like to know how many in the audience have cows at home that they are milking.

(Three-fourths of the audience voted aye.)

Mr. Wilson: I declare. That sort of makes me feel good. I did not suppose we had so many of that sort of people. If this is true I will begin on a different line. When we have our conventions over in Illinois I do not believe we have as many dairy farmers as there are here today. I am glad to say this for Indiana, but sorry to say it for Illinois. But even so, you people are glad to come and try to get information from the people whom the Secretary has asked to talk to you.

Our people are interested in cream and milk, and are giving a good deal of attention to the handling of it, but they are not yet living up to their opportunities. I have not had an opportunity to visit any of the large sanitary milk plants in this State, and I understand there is one in your city, and other places over the State. I think everyone should visit these places and see how carefully everything is handled and taken care of. After you see this you will want your cream and milk from there, and I am sure you would drink more milk and eat more butter. If we could have sanitary milk saloons instead of lager beer saloons the country would be a whole lot better off, and the men and women would be better off, and so would boys and girls. There is no other one by-product of the dairy that would be as much good to a community as good, wholesome buttermilk, and if the dairymen and manufacturers of creamery butter would take up the question of supplying saloons that are already established with buttermilk it would be a profitable thing in more ways than one, Mr. President.

We have been thinking that butter is about the only thing that is of value in the milk. We have learned that there are a great many other things in the milk that are of use and profit. We have the butter-fat, to be sure, to begin with. Then we have the casein, which some of you do not know much about, but that it is the part of the milk that is used

for making cheese. Casein has been used in different channels of business, and the by-products of milk have developed into a wonderfully large business. So you see we have something besides butter. Here you have established not only a market for butter but for others as well—all of the by-products.

I want to impress this one thing on you all the way through, and that is this, that the quality of your produce will determine the price you will get for it.

Gentlemen, I thank you.

President Johnson: We have a large number of dairymen present at this convention, and we ought to have a large membership. I think it would be a good idea for two or three solicitors to be appointed to take memberships.

(Motion that President appoint solicitors. Carried.)

President Johnson: Gentlemen, our time is growing short, so please boil down what you have to say as much as possible.

ALFALFA: GROWING AND FEEDING.

G. P. NEWSOM, WEST NEWTON.

Ladies and Gentlemen—I do not know very much about alfalfa, for I have not grown it very long. The trouble with the most of the things that we raise on the farm is that they take the nutriment from the soil and do not put it back, so we must work to do this. Some things put nitrogen in the soil, and the chief of these are clover and alfalfa. Clover has been grown in Indiana a great deal and has developed agriculture wonderfully. There is no longer any doubt about the fact that the alfalfa can be grown in Indiana. There are a number of farmers in Indiana that have as much as 10, 20 or 30 acres growing successfully. Another thing in its favor is that it does not have to be replanted every season. I know of cases, one at least, but not in Indiana, where 42 crops of alfalfa have been cut from one field in 14 years, and there was no reseeded.

The first thing to do is to get a start. Alfalfa has a fine seed like clover, and when we put it in the soil we want it to grow. The time of sowing will depend a great deal on the source of the seed. Seed grown in a climate like that of Indiana can be sown much earlier in the

season than seed grown elsewhere. If you do not know the source of your seed it is better to sow in May. That is what I would suggest. This seed is a great deal like clover seed in appearance, and you have to treat it a great deal like clover seed. The first thing to do is to keep the weeds down until it gets started. I think it is a good plan to sow oats as a nurse crop—about a bushel to the acre. The object is not that it helps the alfalfa to grow, but it keeps the other things from growing, until the alfalfa can get started. In preparing the soil we want it good and fine, and as rich as we can get it. A good coat of manure would be of great benefit. This should all be done before sowing the seed. The oats are an excellent thing to keep the weeds out. You should not expect anything whatever from it the first year. When it is cut and left on the ground it aids because it keeps the water from being evaporated so soon. It is pretty safe to say that alfalfa will grow anywhere that clover will grow. I understand that there have been a great many failures in starting alfalfa. The bacteria that grow on the alfalfa root are not the same as grow on the clover root. There is another way to inoculate a field, and that is if there is another field near in which alfalfa has been raised get the top soil off that field and sprinkle it over the new field and in this way inoculate it. The man that I have in mind took soil from a neighboring field and sowed it broadcast. The difference was so pronounced that you could trace the waves where the soil fell. It had inoculated the field and given it a better chance to grow. I am giving this to you for what it is worth, and you can do as you like about following my advice.

I have found that alfalfa is very hard to cure. If you cut it and let it lie in the sun a day or two it will become brittle, and when you move it the leaves will fall off, and you lose the best part of your hay. A ton of alfalfa leaves contain as much protein as 2,800 pounds of wheat bran. So we can not afford to lose them. This makes alfalfa growing a little more difficult than if we could cure it in the way we cure clover. I cut a little down at a time and rake it into small wind rows. I remember one time on our farm we cut alfalfa down on Monday morning and it was not taken up until Saturday night. It took it the whole week to dry. If it had been allowed to lie in the hot sun it would have been ruined, and the stock would not have eaten it, but it was not. Alfalfa is good for pasture, but if it is used for pasture it must be pastured closely, because if the stems are allowed to get very high and stand very long they become woody and hard, and the stock will not eat them, and so if you intend to pasture the alfalfa you must pasture it closely, so as to keep it tender—keep it clipped down closely. We turned our cows in on the pasture this summer, and they went around the fence and ate the blue grass out of the corners before they ate the alfalfa, the reason was that we had not kept it clipped close enough; it had been allowed to stand most too long. Had they been turned in on it sooner I

might be able to tell you a different story today. It is good for cows, hogs, sheep, horses, in fact, almost all of our live stock. When it is made into hay it is not so good for the hogs, but is good for other live stock.

I think this is all I have to say on the subject. Gentlemen, I thank you.

President Johnson: We will now hear from T. E. Ellison, of Fort Mr. Ellison, Jr.: Mr. Ellison is not able to be present today, so he has asked me to read his paper.
Wayne.

T. E. ELLISON, FORT WAYNE.

We have been asked to tell something about alfalfa, and we can do it best by telling our own experiences.

We have 31 acres that have been cut for five years, two acres that have been cut for four years, six acres for three years, and 21 acres that we have cut for two years. It is on a black clay and sand loam that is from eight to ten feet deep, with a slight incline toward the north. We think that alfalfa will grow anywhere in this country if the land is deeply drained, for being a root growing plant it must have plenty of ground to grow in.

In preparation the land must be warm, say from April 10th to 15th, a little later than we usually sow oats, plow the land deep, nine or ten inches, harrow until it has a fine tilth and when in the most excellent condition, roll.

In sowing, drill from three pecks to one bushel of oats, then sow broadcast on the loose ground from 20 to 25 pounds of bright, good seed and roll again.

Cut when the oats are coming into blossom about June 10th to 15th. Let the oats lie till toward evening and before the dew falls cock them up into heaps, having about 200 pounds to the cock. The next day open them up, throwing four piles towards each other. At night put the four together. In 24 or 48 hours throw four of these towards each other, then put these four into one and let lie till well cured, being careful not to let the cocks lie in one place long enough to injure the young alfalfa.

We cut again in about six weeks, as the alfalfa begins to show blossoms, and again in September.

Governor Hoard advises against frequent cutting the first year, because it creates a tendency of the plant to grow too much top and too little root. He may be right, but with our deep alluvial soil we have found our way very successful.

After the first year we cut very early, when not to exceed one-tenth of the blossoms have appeared. Do not be afraid to cut it down, for while some of it may be injured by wet weather, the year's aftergrowth will be better and heavier from an early first cutting than from later cutting.

We nearly always let the cutting lie till the next day, being careful to cock it when tough, so that the leaves will not shatter. We keep making the cocks larger as we do with the oats, but not so fast. We do not spread it out to dry, after having once put it in the cock, until thoroughly cured, and then we put it in the barn.

It is encouraging to know that it does not damage as much from rain as other kinds of hay. We expect ours to be from four to six days in curing, and to go into the barn with but little brown or bleached bunches.

We cut three times a year. It grows about 24 to 30 inches tall and makes a dense mat all over the ground. Last year we hauled 174 large loads into the barn from 31 acres, and our hay-racks are 18 feet long.

We think it would be wisdom to chop it before feeding, although our cows eat it readily.

We believe a ton of alfalfa hay is worth 1,800 pounds of bran. We know our cows have done better this year with a ration of ensilage and alfalfa, and just a taste of bran, not over one or two pounds a day, than they formerly did with ensilage and stover or other hay balanced fully with bran and corn-meal enough to make a heavy grain ration.

President Johnson: I will now announce the names of the gentlemen who are to solicit memberships, and they may go right to work: George Drischel, Samuel Dungan, Wesley Antrim, and W. N. Wilson. The next on the program is J. M. T. Welborn of Bridgeport.

J. M. T. WELBORN, BRIDGEPORT.

J. M. T. Welborn: My experience with alfalfa has not been very satisfactory. In 1902 I sowed two acres of alfalfa and we got a splendid catch, and it did nicely until it grew a few inches high, and then it began to turn yellow, and we went over it with the mowing machine and clipped it off and it commenced to grow again and did the same way. I tried to make everything right for the cultivation of the alfalfa, but the second year was just the same as the first. I have not been able to get enough alfalfa to pay to gather it up. I have learned this, that I can not raise alfalfa and chickens together. The chickens love it dearly, and they go for it if there is any chance at all. I think perhaps if we had inoculated our land it would have made a crop sufficiently large to have been harvested, but as it is we have not been able to get any hay.

When you are buying this seed you want to be very careful about what you are getting. You are very likely to get red sorrel, and I think that is one of the greatest pests I have ever seen. The only way you can get rid of it is to dig it up, and then I think you are following the safest plan when you burn it. I think it is one of the greatest pests I have ever seen in the way of a weed pest.

I think alfalfa would be profitable and the stock would eat it readily

if we could raise it. That is the only question with me. We should also be careful about not letting other weeds get mixed in with the alfalfa, for if we once do, it will cause trouble. I am with alfalfa like I am with milk shake. I have heard a great deal about it but I have never seen it, and so I have heard of alfalfa making phenomenal yields, but I have never seen it. I have seen several patches through the country here that look very much alike to me. There is one west of Indianapolis that had a fairly good crop, but the rest looked very much like mine. I am friendly toward alfalfa, but the question with me is how to raise it.

President Johnson: We have about 10 or 15 minutes left for the discussion of this topic. I should like to request that every speaker when rising from his seat, address the chair and give his name so that the stenographer can get the proceedings in full. If you do not give your name we can not give you credit for what you say. The meeting is in your hands for a few moments. These meetings are simply what we make them.

S. B. Woods: In regard to the chickens eating alfalfa, I want to say that I think it is one of the best things that you can feed to chickens. I have a brother-in-law in the chicken business, and he beats anything I have ever seen to make the hens lay. He has a machine that cuts this very fine and he feeds it to the chickens. He considers it the best food he can get for the chickens. He thinks that it is better than oats or bran. It is the protein in it.

I should like to ask, Mr. Ellison, whether or not the inoculation of their soil was a benefit to it?

Mr. Ellison: We have not found it necessary to inoculate our soil. We plant it just as it is and get along nicely.

Mr. Woods: Do you know whether or not it has nodules on the roots?

Mr. Ellison: I can not tell you about that. I am not a farmer, for my father is the farmer, and I attend to the dairy business.

Mr. Slater: I am well acquainted with the land that Mr. Ellison speaks about and it is good land, and well adapted to the raising of alfalfa. It is better for this than many sections of the State.

President Johnson: I think one of the things that we want to get clear is the inoculating of the soil. This seems to me important. I am wondering if there are nodules on the roots of the alfalfa. Alfalfa will not grow if the roots are in water. The land should be high enough and well enough drained so that the roots are not in the water.

Mr. Greshen: I should like to ask as to the best method of sowing alfalfa. Should it be sowed by hand or with a drill?

Mr. Ellison: I think it would be better sowed with a drill, for it needs to be covered in some way. We sow our oats first and then the alfalfa broadcast, and we have very good results, but if we did not sow the oats first I should think it would be better to use the drill.

President Johnson: How much do you put to the acre?

Mr. Ellison: Twenty to twenty-five pounds of seed broadcast.

Mr. ———: I think it is a good idea to have all of the seed covered so that it may germinate. There is trouble in getting alfalfa to grow thick enough on the ground. If you do not get it thick enough at first there is a chance the second time. I should like to hear more said on the inoculation of the plant. I am not quite satisfied on that point as yet.

Mr. Glover: I should like to ask Mr. Ellison if sweet clover grows on the farm or by the roadside?

Mr. Ellison: We have none under cultivation; we have no clover whatever under cultivation. We have white clover that grows along the roadside about three-quarters of a mile from our alfalfa field.

Mr. Glover: I raised this question because Dr. Hopkins of the Illinois Experiment Station states that he has discovered that the bacteria that live on the roots of white clover are the same as those that live on the roots of the alfalfa, therefore that is one reason why your alfalfa is so good. I think without doubt the same thing is added to the field in this way as is added when you take the soil from another field and inoculate the new field. I think the germs taken from the sweet clover are just as good. It grows two or three or four feet high by the roadside, and if cows eat it, it will taint their milk.

President Johnson: Has anyone anything else to say?

Prof. Van Norman: I should like to ask Mr. Glover if he thinks it is out of the experimental stage so that he can have no hesitancy in recommending it?

Mr. Glover: The professor at the Experiment Station in Illinois seems to think so.

Mr. Woods: How long after you inoculate a field until it loses its power? I remember that I have tried to grow alfalfa time and time again, and it is a question with me as to how to do it. I know the

theory is that you get a bacteria, that you get a few germs at a time and keep on until your soil is thoroughly inoculated with the germs. I was in Nebraska where they grow alfalfa by the thousands of acres, and it was reported there that the farmers had tried and tried to grow it before they could get a good start. If they once get it established they have no trouble in growing alfalfa in Nebraska. It sometimes takes a long while to get it established.

President Johnson: I understand from this discussion that unless the alfalfa has nodules at the roots it will not take any nitrogen from the air.

Mr. Glover: If it does not have these nodules it will turn yellow and die. These little germs take the nitrogen out of the air and put it in the ground, which, if you went to the market to buy, would cost you 15 cents a pound. This is one of the most important elements of plant food.

Mr. Roberts: I have a field of 12 acres of alfalfa, which looked very promising at first. I had my ground in fine condition and sowed 30 pounds to the acre, and then went over it with the spring-tooth harrow, and I must say that it looked very promising until the winter set in. Just above me, about two miles, a neighbor has three acres, and he has cut it for four or five years, and last season he cut 18 tons off of that three acres. He did not guess at it but weighed it, so it must have been accurate. He did not say that he had so many loads on an eighteen-foot rigging, but he took it to the scales and he had over 18 tons off of the three acres. I do not know about his inoculating the soil. I know that he clipped it off three times in one season, and it looks all right to me now.

President Johnson: What condition was that in when it was weighed?

Mr. Roberts: It was cured. He was putting it in the barn, after it was cured and he weighed it, and there was a little over 18 tons on the three acres.

Mr. Millhouse: What kind of soil was it on?

Mr. Wood: It is on a black loam, and the soil was rather wet. I have been contemplating putting alfalfa on one of my fields which is too late for corn, as it will hardly mature because it is so late before I can get it in. I have been thinking about this for some time, but I rather hesitated.

Mr. Glover: It is a kind of swampy soil, is it not?

Mr. Wood: No; not a swampy soil.

Mr. Glover: Wet early in spring, as I understand it?

Mr. Wood: Yes, sir. I would like to say right here that I have two kinds of land, some on the river bank, and the other is gravel and clay, and I should like to ask the advice of some of the alfalfa growers as to where to plant my alfalfa for the best results.

Mr. Glover: I would hardly like to advise you on a question like that, for I hardly think any of us know all about it. I should like to say that I think the gravel and sand that is mixed more or less with clay would be the best place for you to have your alfalfa field. I would rather sow it on rolling land, and land more or less gravelly, whether that is heavy, light, clay or mountain land.

Mr. Wood: I should like to ask the gentlemen what is the best method of inoculating the soil. I have read in the paper that there are three distinct ways; first, with dry soil, then soil that is not dry, and the other one I can not call to mind.

Mr. Glover: Different people differ as to the best way to inoculate their soil. We inoculate by using water in a sprinkler, and we find that a very satisfactory way, but some folks like dry soil sowed broadcast over the land. I believe that the United States Government recommend that the seed be dipped, and possibly that is a good way. I think it is really a matter of personal choice.

President Johnson: In using water do you wet your field?

Mr. Glover: Yes, we cover the entire field.

President Johnson: When you use soil is it necessary that you cover the entire field?

Mr. Glover: Yes, because you can tell in many instances where you quit putting on the soil whether it is dry or not, and you can almost tell to a line where you quit inoculating the seed.

President Johnson: Wouldn't the inoculation spread?

Mr. Glover: Yes, in time. If it is planted on the side of a hill the water running over the hill will spread it. In Northern Illinois where I worked for a number of years, whenever we had a quantity of sweet clover by the wayside, close to a patch of alfalfa, it would grow splendidly, and this is what suggested the experiment to Dr. Hopkins, which he thinks is quite correct.

Mr. —: I would suggest that they break the ground in the fall and during the winter months take manure and spread over it, give it a good surface coat of manure, and then sow your alfalfa, and I believe it will beat all of your inoculating.

Mr. Colier: I should like to ask the gentleman over there how to prepare this seed?

Mr. Glover: If you will send to the Agricultural Department at Washington they will send you full directions. There should be so many germs and so much water in the tank. If you send they will send you a package containing these germs with full directions for using them, and that is just what you are paying these fellows for, to tell you about these things. They have published a bulletin full of interest along this line, and are giving full information if you will only ask it.

Mr. Wilson: The Mississippi Experiment Station have gotten out a bulletin telling all about these things, and will be glad to send you a copy if you will only make your wishes known. It will be very valuable to you because it is scientific and practical.

Mr. —: You must be very careful that you get good seed if you expect to get good results.

President Johnson: Now I have gotten from this discussion that every part of the field should be inoculated. I am satisfied that a great many failures have been made on account of the seed not having the germs on it. Think of the yield that the gentleman spoke of here—18 tons on three acres in one year. Now that is equal to about 13½ tons of bran. We certainly should grow more alfalfa.

We have spent all of the time on this subject that we can spare at present. We are now ready for the next subject.

THE PATRON'S PART IN GOOD BUTTERMAKING.

P. H. KIEFFER, ASSISTANT STATE DAIRY COMMISSIONER, IOWA.

There seems to be an erroneous idea among a great many milk producers that the quality of butter depends wholly upon the skill and ability of the buttermaker. There are certain faults of the butter which can be charged against the buttermaker. These are, the body of the butter, which is also called the texture, the color of the butter, the salting of the butter and the style in which it is packed. If any faults are found in any one of these different parts, the buttermaker can not trace it back to the patron, therefore the maker is held wholly respon-

sible. But now we come to another part in the constitution of butter, in which the maker and consumer are mostly interested, and which counts for almost half as many points as all the other parts when scored. This part which I speak of now is the flavor; if the flavor is faulty in butter it can not always be laid to the buttermaker, but as a rule it is found to be due to the raw material furnished out of which the butter is made. If the raw material is of a poor quality and has not received the proper attention and good care which it should have received it will ultimately show up in the finished product. Milk, as it comes from the cow, is perfectly clean and free from all bad bacteria, and these bacteria get into the milk as the milk becomes more or less exposed to unclean conditions or surroundings. If the milk pail should not be perfectly clean, or if the cow's bag is not properly brushed before milking, or if the barn is not properly ventilated, or if the milker's hands are not perfectly clean, or if the milk is not properly cooled, or if the milk be run through an unclean hand-separator the milk will become inoculated with the different bacteria and at a warm temperature they will double once every twenty minutes and become so strong and powerful that even all that the buttermaker can do by pasteurization or the use of a starter will not overcome the bad effect, and it will show in the butter. If you will take as a rule 20 jars of dairy butter, one is quite apt to find 20 different flavors, each one of these flavors tells under what conditions the milk or cream was handled, and to what kind of bacteria it was exposed. To illustrate this more plainly, take two fresh batches of milk from the cow, one lot let set in an unclean cow-barn over night and the other set in a cellar where vegetables are kept, and in the morning when examining this milk it will not be a very difficult matter for any one to tell which has the vegetable flavor and which has the cow-barn flavor, and when this milk is made into butter, the butter will have the same flavor which the milk has.

The proper care that milk should receive is an all important question, as upon this one point depends the flavor of the butter, and as the flavor has considerable to do with the price of the butter, it means dollars and cents to the milk producer.

At the Ames College in Iowa about two years ago a test was made as follows: A cow was partly milked under ordinary conditions into a milk pail which was washed as milk pails usually are washed, and no extra precautions were taken than was customary, then the cow was enveloped with a sheet and holes cut through the sheet to allow the teats to protrude, then the cow was finished milking by a man who had clean clothes and clean hands into a milk pail that had been sterilized, that is the pail had been thoroughly scalded so as to be sure to destroy any bacteria that might be in the pail or seam. These two different batches of milk were set in the same room with a temperature of about 70 or 75 degrees. The first batch of milk showed sourness and began to get

thick in about 38 hours, the second batch of milk, or the one that so much care was taken in milking, was still sweet at the end of four days. This goes to show that milk must become inoculated with some kind of a bacteria in order to bring about the change. The slower this inoculation takes place the longer milk will keep sweet.

It is a well known fact that milk or cream at a warm temperature will change and become sour much quicker than when at a cold temperature. At a warm temperature the bacteria doubles once in 20 minutes, as stated above, and since we know this to be a fact it is very important that the milk or cream should be immediately cooled down to the temperature of well water, or about 50 degrees, as at this temperature very few of the bacteria are active, and therefore milk can be kept a longer time.

Furnish your buttermaker a first-class quality of milk or cream, and then if the flavor in the butter is not what it should be it is his fault, just the same as it would be his fault if the butter was overworked or greasy. There has been thousands of dollars expended in creameries and experimental stations trying to make first-class butter out of poor milk or poor cream, and so far have been unable to accomplish it. The only remedy is the milk producer must interest himself and save his product from spoiling by devoting a few minutes time in keeping the utensils clean, the cow clean and in holding the product at a cold temperature. There is nothing on his farm that he can do in as short time as it takes to properly care for the milk that will bring him in as much money and as good results.

The man who is producing milk has considerable money invested in cows and buildings. He puts in considerable time in raising the crops to feed the cows and in milking them, and after doing all this he can not afford to neglect to take care of the milk or cream and thereby injure the sale of the butter as the difference in price may determine the profit or loss in dairying. It would be about the same as a farmer planting his corn and then not cultivating the same, and thereby be compelled to take considerably less money for the poor corn. The quality in anything is what makes the price; if it is a good quality it is a good price; if it is a poor quality it is a poor price.

Secretary Van Norman: I was not here when the President introduced Mr. Keiffer, so I just want to tell you that Mr. Keiffer is the Assistant Dairy Commissioner of Iowa. I saw him act as expert on the butter at St. Louis, and I saw there that he knows butter from the cow to the table, and I hope if you have any questions to ask you will ask him, and I am sure he will answer them to the best of his ability.

Mr. Schlosser: Being interested in the creamery business, I am naturally interested in this subject. There is not a man in the house but what acknowledges the truthfulness of what Mr. Keiffer says, and the

importance of it. How is a creamery man to go about it to get this before the people so that they will understand the importance of it? How are you going to reach the farmers? I should like to have Mr. Keiffer's idea of how they do it in Iowa.

Mr. Keiffer: We have found that in order for us to get in our work it is necessary for us to send a speaker into a neighborhood where the milk is produced, and where the butter is made, and let this speaker notify all of these people that there will be a meeting held at the school house or some other convenient place, and generally there is a great deal of interest taken and many questions asked, and we find better results from meetings of that kind than we do from our large meetings, because as a rule at the State meetings just as at this one here we only have the men that manufacture the butter, and the men that make the milk are not present. We spread over the State and hold what we call district meetings. We usually have a few samples of butter there, and we can very easily show why this butter has a good flavor and why that does not. There is too much milk that is exposed and left in the cow-barn. That is one of the greatest troubles in the country in the winter time in Iowa. I do not suppose you have so much trouble here as we do there, for it is not cold here like it is there. When the milk is left in the cow-barn it will be inoculated with bacteria, and they will not leave it. You will not then be able to get rid of them. They go into the butter and hurt it.

Mr. Schlosser: Do they send out speakers for that work, or is it done by the creamery?

Mr. Keiffer: So far as our State is concerned it sends out a speaker. We have two. They merely have to say enough to get the patrons interested, and they will commence asking questions, and this will bring out a discussion, and they will do first rate work at the meeting.

Mr. Schlosser: How long have you been following up this plan of work?

Mr. Keiffer: Three years ago we started the first district meeting in Iowa.

Mr. Schlosser: Did you see any marked results?

Mr. Keiffer: Yes, indeed. Before these meetings were started the milk would come in, and the average score was about 90, and at the first one of these meetings so much had to be said against the way they were doing that we thought they would not come together again, but

they kept coming, and finally the opera house, which would hold two hundred people, was crowded and the average score was 94½. It was wonderful the change that had taken place there, and moreover there is another good thing. We have been the means of getting the farmers acquainted with each other. One man will ask another man what kind of cows he has and how he takes care of his milk, and how much he is making out of his cows, etc. It takes time, but all of these things come. They make more money in this way because the amount of money they make depends upon the attention given to the raw material. We must pay attention to our raw material. When you get a high mark on your butter and get well paid for every pound you sell, it is a paying proposition, and the profit and loss of the cream depends wholly upon the care you give the milk and the care you give the cow from the time you commence milking her. You must take good care of your cow, and good care of your milk. In Iowa for some time we have been receiving two cents above the New York quotations. It has not had a controlling effect on the market, but it has sold higher than the regular market price.

Mr. Ellison: I would like to ask about the relative advantages where they do all the separating at the creamery or in the country.

Mr. Keiffer: I am on the program on the hand separator question tomorrow, and that will be fully discussed at that time, and probably I had better not take your time to tell you about this now.

Mr. Wood: I should like to ask Mr. Keiffer if he thinks it is necessary in putting milk on the market to sterilize it? Isn't it good enough for market consumption without sterilizing it?

Mr. Keiffer: It is not necessary to pasteurize milk to put it on the market in good shape. We are familiar with Mr. Gurler's plan in Illinois by which he sent milk to the old country and back, and it came back sweet, because he kept all bacteria from getting in and destroying the milk sugar.

Mr. Glover: I find that this is one of the most important things we have to deal with. I will tell you, ladies and gentlemen, that our milk strainers at the creamery after two or three hours sometimes contain manure, tops of cans, baby rattles, in fact almost every kind of thing. I suppose it is left on the kitchen floor and the baby in playing around tosses these things in. When the can came in that had the baby rattle we heard a tinkling sound when the can was moved, and when it was emptied we found the rattle. I think the farmers should be educated to a higher standard of cleanliness. It is one of the most important

factors in making good butter, and as Mr. Keiffer belongs to the Dairy Association and goes out and tries to educate the farmers, I should like to bring this question up before we adjourn this morning. We need good clean milk to make cheese out of. We have demonstrated the fact that good cheese can be made in Indiana, as good as in any State in the Union. We must educate our patrons to a higher standard of cleanliness. We find all kinds of people, and I think it is high time that we were taking these matters in hand.

Mr. ———: I think a good way to do this would be when you engage milk of the farmers to tell them that the milk must be brought to the factory in such and such a way, and must be prepared in such and such a way, and above all it must be clean. If they bring clean milk pay them so much money, and if they do not, refuse to take their milk. If you creamery men when you find farmers bringing in dirty milk would refuse to pay them for it, I am quite sure they would change their methods.

I was at a creamery one morning when a farmer came in with a can of milk and set it on the platform, and the manager of the creamery set it back and told him he would not take it. The farmer said, "Why?" The man said, "If you can not see I hardly think I should tell you, but I will tell you. You haven't washed your can for a week. The can has the same dirt on it that it had a week ago, and your milk is not fit to go into good, decent milk." After that that farmer did not bring any poor milk. You can help the farmers along these lines by hitting in their tender spots, and that is their pocketbooks.

Mr. Slater: I have visited a great many creameries in the State of Indiana, and I find that the trouble with the farmers is that they do not know how to take care of their milk. When they are trying to separate it they will mix hot and cold milk together. I think as a rule the farmers of Indiana are pretty clean about their milk, and I will not stand for too much being said about their not being clean.

Mr. Schlosser: I would like to ask whether the creameries in Iowa grade their milk and cream as it comes in?

Mr. Keiffer: Not as a rule.

President Johnson: What do you mean by grading cream?

Mr. Schlosser: Paying less for poor cream and milk. I understand that some of the Western creameries are doing it. If it does not come up to the standard they will not take it.

Mr. Keiffer: That will come up under the hand separator talk tomorrow. It is a large subject and will take considerable time to get into it.

President Johnson: We will now have the report of the Secretary-Treasurer for last year.

Secretary-Treasurer Van Norman: Before I begin to inflict these figures upon you I can not refrain from expressing my personal gratification at the attendance which we have this morning. I have been asked by a great many people why we came to Indianapolis for a dairy convention, because we would not be able to get a corporal's guard. With the executive committee we canvassed the situation very carefully, and consulted the enthusiastic ones living within 20 miles of this place, and they seemed to think if we worked we could have a good convention here, and we are here today, and this is the result.

(See financial statement, page 126.)

President Johnson: Our time is now up, and if there is nothing further to come before the Association at this time we will adjourn to meet at 1:30 this afternoon. Please be prompt.

(The meeting stood adjourned until 1:30.)

THURSDAY AFTERNOON.

President Johnson: The first thing on the program this afternoon is the appointment of committees, but for the present we will pass this, and take it up later. We will now take up "The Profitable Cow," by Prof. C. S. Plumb. Prof. Plumb was one of the charter members of the Indiana Dairy Association. Mr. Plumb has seen fit to leave our State and to go to Ohio, and is now with the Ohio State University, as Professor of Animal Husbandry.

Prof. C. S. Plumb: It may surprise some people in this audience, in view of the fact that I come from Ohio, that I probably know more people in this room than any convention I could go to in the United States. That means that I am probably as much at home here as anywhere. I see a good many faces—people who have been coming to these conventions from the beginning—but I guess I am the only person in the room who attended the first meeting of the Dairy Association in 1891.

My address is not as short as I wish it were, but if I make slow time, I'll cut it off in places.

THE PROFITABLE DAIRY COW.

PROF. C. S. PLUMB, OHIO STATE UNIVERSITY.

Some years ago a young man named John Winslow graduated at an agricultural college. He was born and reared on a New England hill farm. There his father won a living for the family, in the main from the keep of a herd of cows, the milk of which was sold to a nearby creamery. It was slow work, for the profits were not large, but they made a living.

The young man had a love for the country and the farm home. He had received a district school education, and gradually the idea had crystallized in his mind that he needed more education. His attention was directed to the agricultural college. An investigation convinced him that this was the type of institution that would enable him to become a broader, brainier and more capable farmer. Ambition, health, work brought him through college. The four years passed by rapidly, and once again he was back on the farm.

But this was a different young man returning to the farm from the callow youth who had gone out from Rockdale four years before. His intellectual forces had strengthened and his capacity for grasping and solving problems had rapidly grown. His father soon realized that the young man of 22 was no longer a boy. He was a man whose judgment he could rely upon.

On various occasions during his college life, when visiting home, John had looked over the herd, and the thought gradually grew upon his mind that the cattle in the stable were not what they should be. In his Junior year he had taken a course of instruction, which involved a term of work studying breeds of live stock, another term was partly devoted to the principles of breeding, and the subject of feeds and feeding occupied several hours a week the third term. All through this year of study, he had been given practical work in judging live stock. His father owned a dairy herd, and the instructor in animal husbandry in the college had been teaching him important lessons, which in his opinion had a direct application to the conditions at home.

What were some of the real practical truths that he had been taught leading up to success? He had learned by repeated illustrations, that like produces like, and that it was a law of breeding that was a part of the creed of every great breeder. That poor animals mated produced poor animals. That sires from superior ancestry produced superior offspring. That no great breeder had ever risen to heights of eminence and built up a great herd, excepting by weeding out the inferior and breeding to the superior. That pedigree was worth nothing unless backed by constitution and individual merit. That no man could be regarded as an intelligent breeder who did not breed on the basis of a knowledge of some of these things.

The laboratory or practical work in judging in those college days commended itself to John in no uncertain manner. There was a large room in one corner of the cattle barn. Tanbark covered the floor. Here the instructor brought his class of young men. A cow was brought in. The students were instructed in the various points which go to make up the animal form, and their relative importance to each other. They were told what the ideal, mature cow of this kind should resemble. Then they were requested to take blank score cards and judge and score the cow before them, and see how she would compare with the ideal described. That was not easy the first day, but more practice smoothed the way. Finally several cows were brought into the room and were ranged up side by side, and the class was directed to judge and place them in their relative order of merit. That is just what the judge did at the county fair, only he was obliged to give a written explanation on a specially prepared sheet of paper, as to why he placed those cows in the positions he did. Then finally the instructor placed them as he thought they should be, which was followed by a discussion of the placings of both students and teacher. That sort of thing was interesting, and John saw a connecting link here between this college work and the home herd.

There was a most important phase to this study of stock. As the lessons continued, it was pointed out that there were different types of cattle that had gradually developed into high degrees of perfection, each in its class. This was beautifully illustrated on one occasion when this subject was first discussed. Three cows were led into the room, each quite distinct in type. One was spare of flesh, in fact her ribs showed somewhat, but she had a big body, rather short, clean cut handsome legs, a thin fairly long neck and a gracefully turned rather short head. Back between her thin, muscular thighs below a broad, level rump, was suspended an immense udder, shaped like a half moon, while extending along the belly away from the udder were two big milk veins, twisted like a snake, remarkable in their development. The instructor told the class that such an udder should extend well forward along under the belly and up high behind the thighs, be level below and thick, with four medium sized teats at each corner of the udder, and when milked out it should shrink up and feel mellow and pliable in the hand. This was a cow of the true dairy type, just a grade, but she was rarely beautiful John thought. And when she was milked out before the class, all that striking fullness disappeared and a shriveled, wrinkled udder one-half the original size was in its place. He had never seen such a cow as that at Rockdale. Alongside of her stood a broad backed, deep bodied cow, full and thick in bosom and hind quarter, short of leg and strong of neck. She was smooth and rather fleshy, and her udder was not important, but she would cut some great steaks. Then he was taught that this was a cow of the beef type, given to converting food into meat as the

dairy cow did hers into milk. Then there was a third cow, neither lean nor fat, sort of half way between the other two, with a fairly large udder, that they were informed was a "dual purpose cow." As this young man from that mountain farm compared these cows, and as he later on came to be more and more acquainted with the details of difference, he began to feel that the herd at home was far, far from its profitable possibilities.

There were other lessons taught at this agricultural college that bore much on future problems to be solved. The college instructor in dairying required the students to test the cows of the college herd occasionally. They were obliged to take samples of the milk of each cow of the herd at each milking for a number of days in succession, and find out how much fat there was in the milk, so as to compare values. Here John learned that two cows might be giving exactly the same amount of milk, though that of one contained twice as much butter-fat as the other. As creameries paid for milk on the basis of its butter-fat content, he soon saw that quality as well as quantity was an important consideration with milk production. Thus as he attended his daily duties about the college, he came to see that success on that dairy farm was dependent on several things, each important in itself.

These were some of the things taught this young man during the four years prior to his home-coming, and their value was never underestimated by him. Not long after his return his father gave him a half interest in the farm, and he settled down in a partnership full of anticipation of the future.

There was in his herd at Rockdale 16 native cows. They were just common, plain, everyday scrubs. John's father fancied some of them mightily, but he was not fortified by facts in this position. One day the junior member of the firm came home with a spring balance. He proposed to begin weighing the daily milk yield of each cow. He knew it would not take much extra time, and they would learn something of what the cows were doing. The senior member smiled, but thought it a harmless pastime.

John said, "Father, we don't know enough about what our cows are doing. Do you know that records show that the average dairy cow in this State produces only 150 pounds of butter a year? There have been some mighty interesting investigations made by some of our experiment stations, which prove that we dairymen have some truths to learn that we should have learned long ago. Now, for example, the Illinois Experiment Station years ago, published a bulletin giving records of individual cows on eight farms in that State. It showed that there were 144 cows in these eight herds for a year's test. One herd made a net loss of \$4.54 on each cow, some made a small profit and one got good results. Just think, six of these eight herds had cows that did not pay for the food they consumed. They found all sorts of records among these cows, but

the one that had the best showing gave, 8,949 pounds of milk and made 472 pounds of butter, while the poorest cow produced only 1,482 pounds of milk, which yielded but 68 pounds of butter. The average production of butter of seven of the herds was only 202 pounds a year, and I don't see how there is any money of importance in it for us if we can't beat that sort of record. So I propose to find out what our cows are doing."

It wasn't long before the whole family had begun to study the daily milk sheet. The days crept by, and the milk record grew more and more interesting. Finally John proposed buying a Babcock fat testing machine, and testing the milk of the individual cows for butter-fat content. They had tested the herd milk at the creamery, but this was not enough. This innovation came in more easily. The fascinating and suggestive work of the scales was emphasized by the Babcock. The months rolled by, and all the time John was investigating and thinking. Bill Brown, their nearest neighbor, didn't take any stock in such foolishness, and he knew the Winslow family would land in the poorhouse yet. He was just waiting for that joyful day, when he might say, "I told you so."

You remember that John learned something of dairy and beef type when in college. After he graduated, Prof. Haecker, of the Minnesota Experiment Station wrote a bulletin which contained a record of his researches on dairy cattle, in which he showed that cows of the dairy type had a special value over the other sort. This bulletin laid on the dining room table, and the old gentleman picked it up and began to glance over its contents. There were some pictures in it, and these caught his eye. They represented cows of different types. Then he began to look over the contents of the bulletin. Finally he said, "John, just look here. You know you have talked to me about this farm business with cows, but it never struck me as amounting to much. But this man Haecker seems to have a pretty good bit of evidence here that there is some meat in the cocoanut. He has been feeding some cows out there at the Minnesota Station, and he kept a record of every bit of food they ate and of all the milk each cow made and of the butter fat in her milk. My, but that was a big job though. Now, he has divided up his herd into those with dairy type and those of general purpose type, and this is what he shows they have done. He had 20 yearly records for each class. The dairy type cows produced an average of 7,876 pounds of milk and 430 pounds of butter. The general purpose type produced an average of 6,035 pounds of milk and 295 pounds of butter. In this book here, he says, that by valuing the skim milk at 15 cents per hundred and allowing one-eighth the milk for cream, there is an excess of \$2.42 in favor of the dairy type cow for skim milk, and allowing 16 cents for butter, the 135 pounds gain of the butter of this type gives a further gain of \$21.65. Adding this to the \$2.42 gives a total of \$24.07 in favor of dairy over general purpose type. He also found that the fatter the cows were, or the less belly they had, the less money there was in them. Guess we'd better look into that, John."

As the months rolled by, it became clear to father and son that radical changes must be made in that herd. The cows showed an average for the herd at the end of the first year of only 180 pounds of butter fat each, which at 25 cents a pound yielded a gross return of \$45.00. The feed and cost of keep ran up to \$40.00 each, so where was the profit? And the scales and Babcock showed that some of the sows were boarding at the expense of the Winslow family. It was interesting, for the fact is, these robber cows lacked dairy type. John discussed them with his father. There were six of them, and he showed them up in their true light. Pointing to one of them, she had made only 2,000 pounds of five per cent. milk that year, he said, "Look at her beefy thighs and smooth meaty back. She hasn't any room between her thighs there for an udder anyway. The sooner we get rid of her the better off we'll be. Then take old Speckle. She never did have any belly, and her bag is all cut up in front so her fore teats are three inches above the others. She isn't a good feeder, and a poor feeder never made a good breeder or milker. Let's cut down the whole herd by throwing out these six. It's money in our pockets." Old man Winslow saw the wisdom of this proposition. He couldn't think of any argument quite equal to the facts produced by scale and Babcock test. Furthermore the arguments on cow shape which John and Haecker presented were invincible. So the cows were sold.

You have heard the saying that "blood will tell," and that "every man has a right to be well born." Scientific men apply this to the beasts of the field as well as to the man who directs their destinies. The Winslow family had little surplus money. It was representative of many a hill family in worldly goods. Things must be accomplished gradually. But Mr. John Winslow had not forgotten his lessons of other days. He had studied pedigrees as a student. He had learned of famous cows and great sires. Had not thousands of pure bred dairy cows records of 14 or more pounds of butter fat in seven days? Had not the descendants of Golden Lad, King of St. Lambert, Paul DeKol, Sarcastic Lad, American Champion and others proven the unquestioned value of blood? They certainly had. "And blood, blue blood if you please, was wanted in the herd," said Mr. John Winslow to his father. Said the son: "Father, we have never had the influence of a good bull in our herd. We have used the common grade stock of our neighbors. It has brought us nothing of value. The calves are without merit, and the heifers are like the other poor ones of the community. We have got rid of six of the herd. Let's buy a young bull that we can use on the remaining cows, that will bring us something worth having. Let's buy a bull from a splendid pure-bred cow of dairy type, sired by a bull that has proved himself a breeder. Think what it means! To many men think only of the cost of a bull in money. The value of a bull is measured down through future generations. The first calves have 50 per cent. of his blood, and if he is a good

breeder he should wonderfully tone up our herd and greatly add to our milk and butter record. This is simply the experience of the best breeders in history. We can use this sire on our herd and the stock of the neighbors for two or three years, and then sell him while he is vigorous and valuable, and then buy another not closely related to him to breed on the old cows and their daughters. Instead of buying a \$20.00 grade bull, let us seek a pure-bred one, that is a good individual and well bred, and pay the price. We ought to get a good one for our purpose for \$100, but let's get the right one anyway."

If you have a son, a partner of yours, who is earnest, business-like, industrious and intelligent, you had better do as old man Winslow did, and let him take the lines in his hands. If you don't the chances are you will be sorry.

So the hunt for a bull began, and it ended in the purchase of an animal of a style and quality that neighborhood had never seen before. He was a breeder, as had been his sire before him and his calves showed constitution, style and quality.

The second year the Winslow herd averaged 250 pounds of butter and things were generally improving. The old gentleman began to see more uniformity in the cows, in style and make-up. The calves he said were just like so many peas. They used to wonder what sort of milkers the heifers would develop into. Then began the study of calf form, and calf udders. It was seen that some of the calves had not only well developed udders, extending out front and behind, but they also had the thin thighs so essential for room between. Those were good signs, thought John.

In New England more than elsewhere in America, feeding stuffs are high in price, because in the main they are produced far away on the fertile lands of the West. The farmers bought prudently of grain, and many gave painstaking study to the relative cost of feed stuffs and their value in combinations. There were men about Rockdale who were intensely interested in what they fed their cows, but they had not reached the point of learning whether they were feeding profit-producing cows or not. Winslow senior always watched the grain bin, much as did his neighbors, but until his son brought new ideas to his attention, he had quite overlooked the significance of the individuality of the cow. The Minnesota experiments of Haecker had interested him greatly. Later on, Prof. Beach, of the Connecticut Agricultural College, published some experiments of the same kind, that he thought was even more telling than those of Haecker. Beach had 50 cows, which he divided into three groups. There were 35 classed as of the dairy type, which from the pictures resembled some in their own herd, which John said had the proper shape. Some others had shallow bodies and lacked belly and digestive capacity, while eight others were smooth and fleshy in type. These cows had credited to them 163 annual milking records, 80 of which were produced by those of the dairy type.

The results secured show clearly and decisively that the dairy type was the money maker. The little pamphlet which contained this report expressed it in figures this way:

	<i>No. of Cows.</i>	<i>Cost of Food.</i>	<i>Yield Butter Fat, Pounds.</i>	<i>Profit.</i>
Dairy type	35	\$54 43	301	\$28 09
Shallow body type.....	7	49 42	201	5 81
Fleshy type	8	50 50	206	6 09

In discussing this report with his father, said John: "We do not pay attention enough to the character and type of the animals in our herd. There really is not a great deal of difference in the cost of the food which the different kinds of cows ate, but see what a difference there is in what they produce! Those dairy type cows made an average profit of over \$20 more per head than the other two kinds. Here it states that one of them made 311 pounds of butter, which yielded a net profit of \$57.25. In my opinion too many of our dairymen are forgetting that feeding is secondary to breeding, that they first must have the right sort of cow to get the best kind of results. This bulletin ought to be read and studied by every dairy farmer in the State."

The records of the Winslow herd were improving steadily. At the end of the third year the books showed that the cows had averaged about 275 pounds of butter fat, while the cost of feed had not grown. Some of the heifers, soon to be fresh, were full of promise to John. "We'll aim high," said John, "and breed this up to a 400 herd. Why not? Plenty of cows have done that well in some of our great herds. The Guernsey cow, Lily Ella, produced 782 pounds of butter fat, and it is said that Pauline Paul, the Holstein, made 1,153 pounds of butter, while there are many Jerseys that have produced sensational records. Yes, I guess we can make it 400 without much trouble. That's the sort of production that makes profit."

Young men of energy and brains, no matter what their business, want to know what the other fellow is doing and how he does it. This has a general application, irrespective of business. The farmer's institute grew out of this feeling. The institute is an educational medium to help farmers. Under right conditions, it introduces new ideas into a community. Consequently, when the first institute was held at Rockdale, the Winslows took a lively interest. They could not help it because the dairy cow was up for discussion. The principal speaker was a great dairy authority, who had two characteristics of a delightful sort. Next to telling a good story, he most enjoyed talking about the cow. He told some mighty truths, even if he did say that whenever he saw a cow he wanted to take his hat off to her as though she was a lady. John got some new inspiration from him, and came away surer than ever that he was working in the right direction.

Five years after John's return home the herd had come up to an average yield of 350 pounds of butter fat, and the three year old heifers were beauties, for the bull first bought had proven a great breeder. He was sold for almost what he cost to a neighbor and then another of the same breed, of somewhat different blood lines took his place. He was of the same type and character, and thus they hoped to continue the uniform development of the herd. It gratified John not a little bit that a neighbor should want to own the old bull, for it meant that the gospel of good breeding was spreading in the community.

The health of their stock had been good ever since the new administration began. The lessons which he had learned from the college veterinary instructor had been helpful on occasions, and simply emphasized the useful character of his training during those four years. Milk fever, the dread of all dairy cattle men, had visited him but a little. His motto was, "An ounce of prevention is worth a pound of cure," so he fed cooling, laxative foods before and after calving, kept the cows clean and in healthy condition and then acted quickly if sickness occurred. Later on in his career, when he had many heavy milkers, he adopted the method of injecting sterilized air into the udder when milk fever occurred and with highly gratifying results.

As the herd grew in age and quality, the subject of future improvement was never lost sight of. Good dairy literature found its way onto the sitting room tables, including both experiment station publications and dairy and live stock journals.

One day at the dinner table, John surprised the family by announcing that he was seriously considering going to the World's Fair. He would enjoy the change, but as he said, "Father, I would like to see the dairy cattle test and study the cows there a bit. As those animals represent select ones of different breeds from over the country, I should like to examine them and study both type and breed." "Well, if I were you John," said the elder, "I would not only see those cattle, but would stop at Syracuse and Rochester and see those two herds of Firth and Bogswell. We have read a deal of them and of the remarkable records some of their cows have made, and it might pay you to stop en route and see them. You might pick up some ideas on breeding and management."

This accounts for John going away on a vacation in July after the haying was finished, a thing he had never been guilty of before. He felt kind of guilty as he was driven to the station, all dressed up in his Sunday best, for he knew the folks home would have to do his chores. But he believed it would pay. He did not realize then, like many another good brother, that travel is a great education in itself. He learned that later. As he sped across country in the rapidly moving train, through fertile valleys, over rich bottoms and along by rolling uplands, he saw many herds of cattle, kept mainly for milk production. He was greatly im-

pressed with their variation and their apparent inferiority, even when seen from the cars. It was a revelation to him. In later years, when traveling through the green pastures of England and Scotland, among the many uniform herds there, his mind harked back to that trip across American soil on that warm July day. The contrast was striking, and he felt full sure that it was educational in its effect. If some of his fellow countrymen could have seen these sights as he did, he was sure they would have taken the lesson well to heart.

The exposition reached, the cows soon came in for examination. They represented both dairy and general purpose type, but it impressed him that from the point of dairy value, the closer the cows adhered to dairy type, the better they ranked in production. There were exceptions, but the average of a class was what he judged by. From the profit point of view, he saw more money in the udder of capacity than he did in the thick buttocks and meaty back and breast. The working dairy records were also demonstrating that one class gave better returns than another. He was particularly impressed with several individuals, not so much for breed as for dairy character.

On the return home a short stop was made at the two herds referred to by his father, and here he saw many great cows of wonderful capacity. He noticed that they had wonderfully well lighted barns on their farms, and he saw their advantage, knowing that tuberculosis, that dread disease among cattle, would not thrive in plenty of light. He also noticed that the calves were provided with nice healthy pens, where the sun in winter could reach them. These stables were not especially expensive, but they were sanitary, furnishing absolutely necessary conditions for producing the best grade of milk. The stables were clean, the cattle free from dirt and dust, and though kept in during the day in this hot July weather on account of flies, they were in clean, healthful surroundings. These two farms sold milk to a very particular trade, one of them shipping to New York City. Recent years have seen patrons of milk producers calling for far more care in milk production, giving them an essentially germ-free milk. To show how particular some buyers are, Mr. Frith showed John a letter, of which the following is a copy:

"Please ship me two quarts of pasteurized milk from a cow whose bag has been washed in peroxide hydrogen and wrapped in antiseptic cotton during the heat of the day. I desire this from a cow that is given distilled drinking water, and is fed microbe-disinfected meadow grass, free from noxious weeds. Also see that her temperature is down to 80 degrees Fahrenheit when she is milked. See that the stable is thoroughly disinfected daily."

These herds showed strikingly the effects of careful breeding. He noticed the bulls used were short-legged and strong bodied, with much quality. He found that the owners used sires from dams that had udders of very superior shape, and they stated that the daughters of these bulls

tended to reproduce through them the mother's characteristics. Bogswell brought out a ring of four grand cows. He called them "The Big Four," and lined them up for his inspection, udders toward him. He marvelled at their size and apparent capacity. The owners laid much emphasis on the part the bulls played in fixing this type. Bogswell more than once said: "Mr. Winslow, the bull is more than half the herd; yes, sir, more than half the herd."

John reached home after ten days of what seemed to him to be a most profitable and enjoyable trip. At the supper table that night he began the story of that journey and the lights didn't go out in the sitting-room till far later than was common in the Winslow family. "John," said the old man, "what made the biggest impression on you in that dairy cattle barn at the fair?" "The dairy type," said John. "I was satisfied after my inspection that these smooth, meaty cows, could not do the business we want done."

Later that fall the final report on this exposition herd of ten different breeds was made. The father, after supper one night, pulled the wrapper from his "Dairy Intelligencer" and read the results of the test. Looking it over, he said: "John, your judgment on the exposition cows was good. Hear this from the report about results: A Guernsey, Mary Marshall, produced in six months a butter profit of \$59.40, ranking first. A Red Poll cow, named Mayflower, of a very milky type, which I remember you especially told about, stood second, her butter making a profit of \$52.40. Excepting for this one case, the other cows of the first ranking ten were all cows of dairy breeds. Where the total record of five cows in each breed is recorded, I see that they show the Guernsey first, with butter fat worth \$239; the Jerseys second, with \$225 credit; the Ayrshire third, with \$218; and the Holsteins fourth, at \$211. From the butter point of view, the dairy breeds beat the others out of their boots. We had better stick to our type and work deeper into the breed, my son." "Yes, father," said John; "I believe it is absolutely essential, if we are to get the very best dairy results from our herd, that we must stick to cow type and never lose sight of its importance."

Seven years had passed by since young Winslow had returned to the farm. The herd had gone through a remarkable change. The process of selection, culling out and breeding up, the butter yield had increased from 180 to 400 pounds a year. The merits of the herd were becoming known the whole country round and the farmers of the neighborhood really began to take a just pride in the Rockdale herd. In fact, the herd was known far more than locally. Enterprising agricultural journalists had discovered its existence and had advertised it over a wide territory.

One day the neighbor who had purchased the first bull John had placed at the head of the herd, made a call and engaged in conversation. He was a fairly good man, but like many other persons owning stock, gave his herd less careful attention than good business warranted. He

not only knew the Winslows laid great emphasis on the importance of correct breeding, but he was well aware that the Rockdale herd was carefully fed and attended to. He recognized the fact that his own cattle looked thinner in flesh, more ill-kept, dirtier and more starved than that of his now prosperous neighbor.

After passing the customary comments on the weather and crops, John remarked: "Mr. Lee, that bull you purchased of us sired a likely lot of calves for you, didn't he?" "Yes," said Mr. Lee, "he certainly did. The heifers now in milk are better than anything we have ever owned before. Still, it seems to me that our herd is not doing as well as it should, and our cattle are not in the condition that yours are. I have been wondering how much feed and care had to do with this difference. Our barn is fairly warm and comfortable and yet our cattle do not look thriving." "How about your feeding and growing?" inquired John. "I feed plenty of hay and straw," was the reply; "but I never have felt that we could afford to feed much grain. The cost is too great. We don't use much provender, I know."

"It is sort of curious," remarked the junior member of the Winslow firm, "but I have just been studying over a pamphlet which I received from the Cornell University Experiment Station. You know that there are in the different States agricultural experiment stations that are working in the interest of the farmer, studying problems in soils, fertilizers, feeding stock, etc. Each of these stations publishes several times a year bulletins as they are called, which tell about their experiments. These are free to those who desire them. The professors at the agricultural college used to make students study over some of the more important bulletins, and since I graduated I have been getting bulletins from some of the States whose publications I thought would help me. Now, in this bulletin Professor Wing and Mr. Ford tell of 'An attempt to increase the fat in milk by means of liberal feeding,' which is somewhat in the line our conversation has fallen into. They planned an experiment to find out whether a herd of dairy cows previously kept under adverse conditions could be made more profitable by better feeding and care. So they went out into the country near the station and found a herd of 21 cows with a reputation of being poorly fed that had been on the same farm for some time, that had a large proportion of comparatively young animals, most of which had calved as nearly as possible at the same time. In this herd only four of the cows were more than eight years old, all but one had calved within a period of two consecutive months, and all were real thin in flesh, much as yours are. Like yours, they represented native and mixed breeding. The experiment then begun by the station, ran somewhat like this. A record was kept of the production of the herd in milk and fat for one entire milking period on the farm of the owner, without in any way changing the conditions under which the animals had lived. The man who owned the cows, Mr. Gibson, fed and cared

for them just as he had always. The station arranged for him to weigh the daily milk yield and take frequent samples of the milk of each cow, which was once a week tested for their butter fat composition by a representative of the station. After the first milking period was over 10 of the cows were brought to the station and taken to its farm, where they were cared for and fed liberally for two years. A record was kept of all the food they ate, and the milk they produced was weighed daily, and its fat composition measured. While these cows were being studied the other cows left on the Gibson farm were also being studied just as they were the first year. On the fourth period of milking the 10 cows they bought were taken back to the Gibson farm and again subjected to the same conditions they were under when the experiment began. During the second milking period at the station they fed the cows all the easily digested food they would consume without getting them out of condition, economy of production being not considered. During the third milking period they tried to feed all the coarse fodder each cow would readily eat, and all the grain that could be eaten in addition such as would give return at the pail. I might say here that this third method really represents our policy at Rockdale farm, to feed liberally yet economically. Those cows for coarse fodder were fed red clover, timothy hay and silage. When the cows were on pasture they also got a grain ration, until the milk yield became very small.

"Now, what was the result of this careful experiment covering four years, bearing as it did on the health and vigor of the herd and its producing capacity? Well, I notice in the first place that the total yield of milk and butter fat was in nearly every case much increased while the cows were at the experiment station under satisfactory care. Of the 10 cows it is shown that by liberal feeding the yield was increased 46 per cent. in milk and 55 per cent. in fat. These 10 cows were not the best in the herd of 21. They simply represented a fair average of the herd. Here is a fair sample of the way those cows did, taking Polly for example: The first year she produced 3,143 pounds of milk and 177 pounds of fat; the second year she produced 5,526 pounds of milk and 346 pounds of fat; the third year she produced 4,802 pounds of milk and 283 pounds of fat; the fourth year she produced 2,945 pounds of milk and 184 pounds of fat.

"Some of the other cows show an even greater influence from feed and care than this.

"In regard to the cost of the milk and fat during these different feeding periods, it is interesting to note that the average cost of 100 pounds of milk the first period on the Gibson farm was 53 cents, the fat being 12 cents a pound; the second period, when economy was not considered, it was only 65 cents an 100 pounds for the milk and 14 cents a pound for the fat, while the third period of good feeding the cost was reduced to 45 cents an 100 pounds for the milk and 10 cents a pound for the butter

fat. Another interesting thing in this bulletin that I see is the change in the appearance of the cows due to generous feeding and care.

"It seems to me that this bulletin teaches an important lesson to us dairy cattle men, for it proves by a four years' actual trial that liberal feeding not only pays in increased production, but it also pays by a more vigorous development of the herd. If the herd is more vigorous, then this vigor is transmitted to the offspring. In my opinion, too many dairy cattle men fail to see the relationship of ample feed to proper nutrition and continuous herd vitality."

The average man is fair minded, and is willing to be influenced by a rational presentation of facts. The contents of this bulletin as presented by John to Mr. Lee, made a deep impression on his mind. Said he: "John, that is a good piece of work those agricultural experimenters have done, and I believe enough in the results which they have secured to profit by it myself through better care and more generous feeding of my own herd. I am mighty glad that I happened to drop in on you this rainy day."

There are many things which go to make up success in any one's business and life, but some of them are of more importance than others. John Winslow was a fair representative of many a bright New England lad of parts who is ambitious to be useful and earn a living on a better standard than the commonplace employe. He was fortunate in a father who was willing to aid and assist him in a useful education, and who was willing to put his education to the test.

John Winslow is a young man yet. The herd, which is yet one of partnership, has increased in its productive capacity from 180 to 400 pounds of butter a year. While the cows with heavier yield, eat somewhat more food, the degree of profit is far greater in excess of cost of production. In discussing the situation, the subject of this narrative said: "It is not a difficult thing to develop a profitable herd. It goes almost without saying that the average cow is a consumer rather than a producer. My own experience, covering but a comparatively few years and several generations of cow life, demonstrates to my entire satisfaction that the foundation of successful herd development rests primarily on breeding the proper type. A large degree of my success has been due to breeding consistently and persistently to that purpose. A suitable bull in type and breeding will yield results of no uncertain character if mated to cows approaching the deep bodied, full uddered dairy type. I recently read an article by Hark Comstock on improving the dairy cow, in which he expressed some truths that have had much application in the improvement of the Rockdale herd. He says: 'According to the statistics of the Department of Agriculture the average dairy cow of the country gives 130 pounds of butter a year. In the dairy demonstration now in progress on the World's Fair grounds at St. Louis the entire Jersey team of 25 cows has averaged more than that in 60 days. Admitting that

better care and better food have to do with the question, there yet remains a very wide margin that can only be credited to the functional capacity of the cows bred in the bone. When farmers began to select their bulls from pure bred herds possessing these great dairy values, letting the beef question and all side issues take care of themselves, they began to establish improved machinery in the shape of dairy cows. Nearly 12,000,000 cows are devoted to buttermaking in the United States, and the product in round numbers is 1,500,000,000 pounds of butter, worth, at 18 cents a pound, \$270,000,000. Suppose that each of these cows could produce a heifer calf by a high class Jersey bull, and the improvement in butter capacity for the new generation were even as little as 5 per cent., which would be an exceedingly small estimate, the increased butter output for a single year, assuming that the price was not lowered, would be worth \$13,500,000, a net profit over present income due solely to the use of improved cow machinery.' This improved cow machinery referred to by Hark Comstock is due to the patient and intelligent efforts of a comparatively few breeders, who have developed individuals and families of great productive capacity, whereby the mass of breeders may improve their herds. It is due to the work of such men that the improvement of Rockdale herd has been possible in so short a time. To them American stockmen owe a deep debt of gratitude. If our herds are not productive and profitable, it is due to neglecting the opportunities provided through the agricultural college, the experiment station, dairy and live stock literature and the help of intelligent breeders. These all point the way toward success."

In drawing this narrative to a close, it is unnecessary to concern ourselves regarding the identity of the subject of the sketch. He still lives on Rockdale Farm in fair New England, where he continues to work among the herd he loves so well, for his is a labor of love, not of suffering. He has been an unconscious instrument on his part in uplifting the agricultural dignity of his community and State, while he stands as a strong example of what a man may do to demonstrate the usefulness of the modern agricultural education. You may not know him personally, but as the years go by you may discover his counterpart here and there when perhaps least expected. If, when in future, you chance upon a strong herd of dairy cows that appears to you much what Rockdale herd is at the completion of this narrative, if you will trace up its history, I am sure you will learn some valuable lessons, even if it does not prove the property of Winslow & Son.

President Johnson: We have two other subjects, so we will hurry through.

THE DAIRY ON THE FARM.

MRS. JOHN CARTER, SEYMOUR, IND.

One year ago last April we decided to purchase a hand separator, because we thought it would save some labor in caring for the milk and would also skim closer in warm weather than we could skim by the gravity process.

Then we decided to purchase a rectangular butter printer and also to wrap our butter in parchment paper. We were milking only four cows at that time and had been retailing our butter the year around at 20 cents, which is the best price at our town for what is known as the best country butter. We built a neat dairy room between the stable and the house in which we placed our separator, refrigerator, churn, etc. With this process of extracting butter of course we had more and of better quality. The grocer offered me 20 cents for all I could make, so I raised the price to 25 cents on all my customers and did not lose one.

We felt encouraged and decided that we would slowly work into the business until we could keep a herd of 10 cows, then, if satisfactory, still further increase our herd, for we think it much better to grow into a business than to jump into it headlong. So we began buying cows, the best we could find for sale in the neighborhood round about until at the end of the year we had 10 cows. Before this time we had decided that for our small farm of 60 acres, located, as it is, near a city of 7,000 inhabitants, the butter business was the best thing we could undertake in the live stock line, and would go along very well with the small fruit business which we had entered into to some extent.

Having decided to make butter, we determined that we would make butter that commanded the highest price on our market, so I attended the 10 days' butter school at Purdue one year ago last December. As a result of instructions received from Profs. Van Norman and Slater, I made butter which our grocer readily agreed to take at 22½ cents the year around, also the buttermilk at 10 cents a gallon. We find this suits us much better than retailing. It saves time and anyone can deliver to the store. We had a triangular butter-worker made, also a seven-gallon cream can and a butter-carrier. From that time to this our butter and milk were delivered regularly every Wednesday and Saturday morning. We had the initial C stamped on every half pound and we guarantee every pound of it, and we agreed to take back all butter not perfectly satisfactory. We have never heard of a single complaint or objection, and Mr. Mills, who buys our butter, has told me often that he wished I would bring him twice as much as I do.

But to return to the cows, we aim to keep nothing but fine Jerseys as soon as we can get to that. We have bought and sold and bought and sold, until at present we have only nine cows and just seven of them are giving milk. Six of them are full blood Jerseys, not registered, but descendants of registered stock. We are using a good but plain old fashioned barn, and do not use stanchions, but use the box stall. Each stall is about twelve by twelve feet. We place two cows in each stall, thus giving the whole size of the stall to each cow for exercise. We keep them well bedded, so it is something like Terry's barn lot.

We believe the comfort of the cow counts for something, and it does seem there would be a good deal of monotony about standing in a stanchion all day long. Men and women were formerly placed in similar devices as a punishment for small crimes. I am not arguing against stanchions, and when we build a new barn we shall probably put them in just to be up with the times. Yet we will do it with a feeling that they are not altogether free from objections.

We have not yet built a silo. You see it is only a year since we decided to go into the butter business. We intended to build one last summer but we were trying to get the summer work done first, and by the time that was done our crop of corn was too far advanced for silage. We are fully aware of the merits of the silo, and would not think of continuing our business without one. We shall have silage to feed next winter. We use shredded fodder, clover and timothy hay for roughage, using timothy when we can not get the clover. In the way of mill feeds we use wheat bran, hominy meal and oat meal. I sometimes use a mixture of one measure of hominy meal to two of bran. Sometimes, but not often, we use wheat bran alone, and often we put a pint cupful of oatmeal in the bran. We give each cow a two-gallon bucketful at each feed except when hominy meal is part of the mixture, then we give a little less, because the meal is much heavier than the bran. The hominy meal we use is from a local mill and has not had the oil extracted from it. We usually add about one ounce of salt to each feed. In summer our cows run on pasture that is a mixture of clover and grass, and have a small amount of bran twice a day, varying the amount from a half gallon cupful up, according to the condition of the pasture.

We have purchased a registered Jersey sire and will try to build our herd up by saving calves from our best cows. The others we sell to the butcher as soon as we can get him to take them. All calves are taken from cows immediately and fed on mothers' milk until about nine days old, then a mixture of whole milk and a little oat meal, bran, shelled corn, or whatever is most convenient.

We do not keep our accounts in pounds but in dollars and cents. We sell a good deal of milk to the milkman who passes our house. He phones ahead and we have it ready for him when he comes past. He

gives us 15 cents per gallon for milk and 64 cents per gallon for cream. Our cows brought us in an average of \$55 per cow between January 1, 1904, and January 1, 1905. In addition to this we have had our own cream, butter and milk, and we use no small amount of cream, especially in the berry and ice cream season. We also had skim milk to feed to the hogs, of which we aim to keep just a sufficient number to take the skim milk and slop produced.

There has been a very marked improvement in our hogs since we have had plenty of fresh milk for them. They have grown faster, fattened better and have been healthier and better in every way. The one thing that induced us to turn our eyes toward dairying was the improvement of our soil. We saw that our crops were getting lighter and knew that we must manage some way to increase them. Dairying has solved the problem. We not only return our crops to the soil but take along with them a part of some other farmer's crops. We paid the owner of a shredder 4 cents a bushel for husking and shredding our corn, and we paid him for 70 bushels per acre, exclusive of the corn shredded by the shredder, which was about three or four bushels per acre.

We are beginners in the business. We hope to continue, but our future as well as the future of nearly all buttermakers great or small, depends very largely upon the action of the present Congress. The oleo manufacturers are seeking legislation that will be disastrous to our interests, and it behooves us to join hands with the other farm organizations and put forth our best efforts to maintain our own interests.

President Johnson: Before we take up the next subject, I believe I will say that we will not discuss any subject until the next one is presented. But first I will ask the Secretary to read the names of the committees that have been selected, the Auditing, Nominating, Resolution and Legislative. We will now have the names of the persons selected.

Secretary Van Norman: Nominating—T. C. Burnside, J. M. Knox, Chas. Lamont, G. V. Woollen, G. W. Drischel.

Resolution—George Freese, G. P. Newsom, J. V. Shugart, G. P. Swan.

Auditing—A. H. Compton, W. W. Fisk.

Legislative—To be appointed later.

President Johnson: Now, these committees are appointed, and we should like to hear from them tomorrow afternoon.

The next subject on the program is "Possibilities for Profitable Cows on the Farm," by A. J. Glover, associate editor of Hoard's Dairyman. I understand that Mr. Glover has had large experience in the dairies of northern Illinois.

POSSIBILITIES OF PROFITABLE COWS ON THE FARM.

A. J. GLOVER, OF HOARD'S DAIRYMAN.

For over three years the department of dairy husbandry of the University of Illinois has been conducting field work among the dairymen of the State. A number of them were persuaded to weigh and sample each mess of milk a sufficient number of times during the year so that the performance of each cow could be estimated with a considerable degree of accuracy. It has been demonstrated by a number of our experiment stations that many cows are kept in the dairy at a very small profit and some at an actual loss. In order to determine the facts and to lead the dairyman to realize their full force and meaning, a man was sent into the field to persuade a number of them to keep a record of every cow in their herds. While this paper gives no facts new to science, yet it presents a line of work on which we have but little data and it brings the farmers face to face with facts that exist upon their own farms. It shows them that some herds are kept at a good profit, some at a small profit, and others at an actual loss.

HOW THE FARM TEST WAS MADE.

The farmers who took up this work were required to weigh and sample the milk from each cow in the herd every seventh week for 14 consecutive milkings. After each cow was milked the milk was poured into a weighing pail, weighed, and the weight recorded on a milk sheet directly under the cow's name. A small sample of milk was then taken with a sample dipper or a milk thief and put into the sample bottles. Corrosive sublimate tablets were used to preserve the samples of milk. Instructions were given to each man to shake the composite samples each day, so as to mix the fresh samples with the rest of the milk and keep the cream from becoming dry or hard on the sides of the bottle. The jars that were used for keeping the composite samples were one-half pint, tin top, covered bottles. When the period of weighing and sampling was completed, the samples were tested either on the farm or at the creamery.

CALCULATING THE AMOUNT OF MILK AND BUTTER FAT.

The milk was weighed and sampled during the fourth week of the seven-weeks period. From the total amount of milk that each cow gave during this time, and the per cent. of fat, was calculated the amount of butter fat produced in the week. From these results were estimated the

amount of milk and butter fat each cow produced during the three weeks before, and the three weeks following the test. The cow's yearly record was made up from these tests, and in this way the total amount of milk and butter fat that she produced during the entire year was determined. It may be objected to that this method did not secure results absolutely correct. On this it may be said that the chief object was to secure data from which cows could be compared with each other, and that this object was fully attained even though the totals may have been either slightly too large or too small. Check methods show, however, that the data are very close to the actual amounts produced. In many cases the dairymen also kept an approximate account of the grain and roughage that each cow consumed during the year. Where this was done the records are of exceptionally high value, for they clearly show the profit or loss of every cow kept in the dairy.

Ten dairy herds, namely, A, B, C, E, F, I, J, L, M and N, have been tested for two years, and I will give you the summary of the 10 herds and a detail report of two dairies. In the 10 herds, 145 cows completed their second year's work. The best cow gave an average yield of 7,190 pounds of milk, 367 pounds of butter fat, and 428 pounds of butter. The poorest matured cow gave an average yield of 4,560 pounds of milk, 135 pounds of butter fat and 158 pounds of butter.

In the first two years the average production of the herds was 4,944 pounds of milk, 201 pounds of butter fat, and 235 pounds of butter. The second year the average was 5,611 pounds of milk, 229 pounds of butter fat, and 267 pounds of butter.

The average production for the two years was 5,261 pounds of milk, 214 pounds of butter fat and 249 pounds of butter.

Herd A made the greatest increase in the second year's test. It produced 1,285 pounds more milk and 60 pounds more butter fat per cow than it did in the first year's work. The percentage of increase was 32.4 per cent. of milk and 42.5 per cent. of butter fat.

In herd E there was a small decrease in the second year's test, it gave 61 pounds less milk and five pounds less butter fat per cow than in the first year's test. All the herds, except E, in the second year's test showed an increased yield of milk and butter fat over the first year.

The average percentage of increase in the second year per cow was 13.7 per cent. of milk and 13.9 per cent. of butter fat.

In other words the average increase per cow was 667 pounds of milk, 28 pounds of butter fat, and 32 pounds of butter.

The increase seems to be due to the following: (1) The cows on the whole received better care. (2) The herds were fed better rations. (3) From nearly all the herds a few poor cows were sold. (4) In some cases cows were purchased that proved to be good dairy animals.

I shall give a report of herds A and F. It should be observed that great improvement was made in each of these dairies.

REPORT OF HERD A.

At the end of the first year's test, the owner of this herd disposed of a few of the poorest cows, but the herd still contained many poor dairy animals. The herd was composed of natives, grade Holsteins, and grade Shorthorns, which were by no means of the dairy type. The cows were in better condition during the second year than they were in the first year's test.

In the second year the herd received a better ration, the rough fodder was about the same, but the meal portion of the ration consisted of shorts and Peoria gluten, instead of corn meal and ground rye, which were the chief concentrates during the first year. The kind of concentrates and roughage fed during the two years was as follows:

First year—Corn meal, ground rye, ground oats, crushed corn and cob meal, corn silage, timothy hay.

Second year—Shorts, Peoria gluten, corn stover, corn silage, timothy hay.

It will be seen as reported in Bulletin 85, that this herd received rather poor rations during the first year, which were about as follows:

The fresh cows received a small allowance of bran and corn meal, together with timothy hay and silage, from October 1, 1901, to January 1, 1902. During the months of January and February to the cows giving the largest flows of milk, was given approximately the following ration:

<i>Food Stuff's.</i>	<i>Lbs.</i>	<i>Dry Matter.</i>	<i>Protein.</i>	<i>Carbo- hydrates.</i>	<i>Fat.</i>
Corn meal	10	8.91	.790	6.670	.430
Silage	35	7.31	.315	3.955	.245
Timothy hay'	10	8.68	.280	4.34	.140
Total nutrients		24.90	1.385	14.965	.815

The ration which the cows received from March 1 to May 1 was perhaps somewhat better than the ration fed in January and February, but it could have been much improved with mill feed. The ration to the fresh cows was about as follows:

<i>Food Stuff's.</i>	<i>Lbs.</i>	<i>Dry Matter.</i>	<i>Protein.</i>	<i>Carbo- hydrates.</i>	<i>Fat.</i>
Rye	4	3.54	.396	2.704	.044
Crushed corn and cob meal... ..	4	3.40	.176	2.400	.116
Silage	35	7.31	.315	3.955	.245
Timothy hay	7	6.08	.196	3.038	.098
Total nutrients		20.33	1.083	12.097	.503

May 1 ground oats were substituted in the place of rye. The cows were turned out to pasture about May 25, but were given a small allowance of silage to July 1. From this time to the completion of the year's work they received nothing but grass.

It is plain to the skillful feeder that the rations the herd received were very poor. The general unsatisfactory condition of the herd bears out this fact. The dairy was fed somewhat better during the second year.

From October 1 to November 15, 1902, the herd received a little shock corn with grass. Beginning November 15 and continuing to February 1, 1903, the best cows received about the following ration:

<i>Food Stuffs.</i>	<i>Lbs.</i>	<i>Dry Matter.</i>	<i>Protein.</i>	<i>Carbo-hydrates.</i>	<i>Fat.</i>
Shorts	9	7.94	1.098	4.500	.342
Silage	25	7.31	.315	3.955	.245
Corn stover	15	8.91	.255	4.860	.105
Total nutrients		24.16	1.668	13.315	.692

During the months of February, March and April the best milkers received the following ration:

<i>Food Stuffs.</i>	<i>Lbs.</i>	<i>Dry Matter.</i>	<i>Protein.</i>	<i>Carbo-hydrates.</i>	<i>Fat.</i>
Shorts	6.5	5.73	.793	3.25	.247
Peoria gluten	2.5	2.25	.582	1.26	.067
Silage	40	8.36	.360	4.52	.280
Total nutrients		16.34	1.735	9.030	.594

In connection with the above ration either corn stover or timothy hay was given in quantities large enough to satisfy the animal's appetite.

May 1 the herd was turned out to pasture, and during this month received all the silage they would eat. From June 1 to the completion of the test the dairy received nothing but grass.

Average yearly record of herd A for two years, and average production for that period:

<i>Year's Work.</i>	<i>No. of Cows.</i>	<i>Milk, Pounds.</i>	<i>Fat, Per Cent.</i>	<i>Fat, Pounds.</i>	<i>Butter, Pounds.</i>
First	18	3,970	3.55	141	164
Second	14	5,255	3.82	201	234
Average for two years.....		4,613	3.71	171	199

The herd in the second year gave 1,285 pounds more milk and 60 pounds more butter fat per cow than it did in the first year. This

increase in milk and butter fat was largely due to better system of feeding during the second year. There were, however, a few new cows in the second year, and a few of the poor cows were sold at the end of the first year. This change, of course, had something to do with the increased yield of the herd. There were still a few cows kept upon this farm that were so poor that the owner would not enter them in the test.

Record for cow No. 6 for two years, and her average production for that period:

<i>Year's Work.</i>	<i>Age, Years.</i>	<i>Breed.</i>	<i>Date of Calving.</i>	<i>Milk, Pounds.</i>	<i>Fat, Per Cent.</i>	<i>Fat, Pounds.</i>	<i>Butter, Pounds.</i>	<i>Days in Milk.</i>
First	3.5	Native	5/29/02	1,838	4.43	81	95	210
Second ..	4.5	Native	5/4/03	3,624	3.84	139	162	238
Average for two years.....				2,731	4.02	110	128	224

Cow No. 6, the poorest animal in herd A, in two years gave 5,462 pounds of milk and 220 pounds of butter fat. A good dairy cow should produce as much in one year as three animals of this kind.

Record of cow No. 10 for two years and her average production for that period:

<i>Year's Work.</i>	<i>Age, Years.</i>	<i>Breed.</i>	<i>Date of Calving.</i>	<i>Milk, Pounds.</i>	<i>Fat, Per Cent.</i>	<i>Fat, Pounds.</i>	<i>Butter, Pounds.</i>	<i>Days in Milk.</i>
First	4	Native	3/5/02	3,833	3.37	129	150	245
Second	5	Native	3/1/03	3,553	3.55	126	147	298
Average for two years.....				3,693	3.45	128	149	272

The average of cow No. 10 is very low. Why she produced more milk and butter fat in the first year's test than in the second, when a better ration was fed, can not be intelligently answered.

Record for cow No. 15 for two years and her average production for that period:

<i>Year's Work.</i>	<i>Age, Years.</i>	<i>Breed.</i>	<i>Date of Calving.</i>	<i>Milk, Lbs.</i>	<i>Fat, Per Cent.</i>	<i>Fat, Lbs.</i>	<i>Butter, Lbs.</i>	<i>Days in Milk.</i>
First . . .	9	Gr. Polled S. H.	11/4/01	6,145	3.63	223	260	294
Second ..	10	Gr. Polled S. H.	11/15/02	6,874	3.87	266	310	273
Average for two years.....				6,510	3.76	245	285	283

Cow No. 15, which was the best animal in herd A, gave considerably more milk and butter fat in the second year's test than she did in the first. Her increased yield seemed to be entirely due to a better system of feeding.

REPORT OF HERD F.

There were seventeen Holstein cows in the second year's test; their average weight was about 1,100 pounds. The herd was kept in a comfortable barn, in healthy condition during the two years and did a much better year's work during the second test.

The cows were given but little grain during the first year. For a period of seven weeks in the winter they received no grain, but were fed corn silage, clover and corn stover. During the second year the herd received a liberal allowance of grain.

The kind of concentrates and roughage fed during the two years was as follows:

First year—Bran, oats, grano gluten, clover hay, corn stover, corn silage.

Second year—Bran, oats, dried malt, dried brewers' grain, clover hay, corn stover, corn silage, timothy hay.

The herd was fed during the first year as follows:

From October 15 to December 1, 1901, the best cows received about the following ration:

<i>Food Stuff.</i>	<i>Lbs.</i>	<i>Dry Matter.</i>	<i>Protein.</i>	<i>Carbo- hydrates.</i>	<i>Fat.</i>
Bran	4	3.54	.516	1.604	.168
Oats	4	3.56	.368	1.892	.085
Clover hay	5	4.25	.340	1.790	.085
Stover	10	5.95	.170	3.240	.070
Silage	35	7.31	.315	3.955	.245
Total nutrients	24.59	1.709	12.481	.704	

From December 1, 1902, to February 1, 1902, the ration consisted of 35 pounds of silage, five pounds of clover hay, and all the corn stover they would eat.

The best cows received about the following ration from the first of February until they were turned out to grass:

<i>Food Stuff.</i>	<i>Lbs.</i>	<i>Dry Matter.</i>	<i>Protein.</i>	<i>Carbo- hydrates.</i>	<i>Fat.</i>
Grano gluten	2	1.88	.534	.776	.248
Silage	35	7.31	.315	3.955	.245
Clover hay	5	4.23	.340	1.790	.085
Corn stover	10	5.95	.170	3.240	.070
Total nutrients	19.37	1.359	9.761	.648	

Oat straw ad libitum.

The cows were turned out to pasture about June 19. The owner did not have enough pasturage to feed his herd entirely, so the ration was supplemented with 30 pounds of corn silage a day. This ration was continued to the completion of the test.

The best cows were fed on an average during the second year approximately as follows:

From October 25, 1902, to February 10, 1903, the best milkers received about the following ration:

<i>Food Stuffs.</i>	<i>Lbs.</i>	<i>Dry Matter.</i>	<i>Protein.</i>	<i>Carbo-hydrates.</i>	<i>Fat.</i>
Bran	4	3.54	.516	1.604	.136
Oats	4	3.56	.368	1.892	.163
Clover hay	2	1.68	.136	.716	.034
Timothy hay	3	2.26	.084	1.302	.042
Silage	40	8.36	.350	4.520	.280
Corn stover	15	8.92	.255	4.860	.105
Total nutrients		28.32	1.709	14.894	.760

From February 10 until the cows were turned out to pasture they received about the following ration:

<i>Food Stuffs.</i>	<i>Lbs.</i>	<i>Dry Matter.</i>	<i>Protein.</i>	<i>Carbo-hydrates.</i>	<i>Fat.</i>
Bran	2	1.77	.258	.802	.068
Oats	2	1.78	.184	.946	.084
Dried malt	2	1.84	.314	.716	.102
Silage	60	12.54	.540	6.780	.400
Clover hay	2	1.68	.136	.720	.034
Timothy hay	3	2.26	.084	1.302	.042
Total nutrients		21.87	1.516	11.266	.730

The cows were turned out to pasture May 20 and were allowed to graze about two hours each day. In connection with pasture grass the herd received two pounds of bran, two pounds of dried brewers' grain, and 25 pounds of silage a day. In July and August most of the cows went dry and were fed 25 pounds of silage and pasture grass. The majority of the cows calved in September and October, thus beginning their third year's work.

Average yearly record of herd F for two years, and average production for that period:

<i>Year's Work.</i>	<i>No. of Cows.</i>	<i>Milk, Pounds.</i>	<i>Fat, Per Cent.</i>	<i>Fat, Pounds.</i>	<i>Butter, Pounds.</i>
First	14	5,846	3.32	194	227
Second	17	7,171	3.29	236	275
Average for two years		6,509	3.30	215	251

The herd in the second year gave 1,325 pounds more milk and 42 pounds more butter fat per cow than it did in the first. This can be accounted for in three ways: (1) The cows received during the second year's test a better ration. (2) Many of the poor producing animals were disposed of at the end of the first year's test. (3) A few new cows were purchased that proved to be good producing animals.

Yearly record of Joe's Bride for two years and average production for that period:

<i>Year's Work.</i>	<i>Age, Years.</i>	<i>Breed.</i>	<i>Date of Calving.</i>	<i>Milk, Pounds.</i>	<i>Fat, Per Cent.</i>	<i>Per Fat, Pounds.</i>	<i>Butter, Pounds.</i>	<i>Days in Milk.</i>
First . . .	9	Holstein	4/5/'02	5,136	3.00	145	180	275
Second . . .	10	Holstein	9/10/'03	3,984	2.91	116	135	274
Average for two years				4,560	2.96	135	158	274

Joe's bride, the poorest cow in this herd, produced in two years 9,120 pounds of milk and 270 pounds of butter fat. There is no reason why a good dairy cow with no adverse periods should not produce in one year as much as she did in two years.

Yearly record of Check for two years and average production for that period:

<i>Year's Work.</i>	<i>Age, Years.</i>	<i>Breed.</i>	<i>Date of Calving.</i>	<i>Milk, Pounds.</i>	<i>Fat, Per Cent.</i>	<i>Per Fat, Pounds.</i>	<i>Butter, Pounds.</i>	<i>Days in Milk.</i>
First . . .	15	Holstein	1/25/'02	6,812	3.16	215	251	252
Second . .	16	Holstein	3/27/'03	5,475	3.36	184	215	259
Average for two years				6,144	3.25	200	233	256

Check's record is not high, but it is fairly good when her age is considered. In her fifteenth year she made 12.2 pounds of butter fat in seven consecutive days. This record permitted her to enter the Holstein-Friesian Advance Registry.

Yearly record of Alfrida for two years and average production for that period:

<i>Year's Work.</i>	<i>Age, Years.</i>	<i>Breed.</i>	<i>Date of Calving.</i>	<i>Milk, Pounds.</i>	<i>Fat, Per Cent.</i>	<i>Per Fat, Pounds.</i>	<i>Butter, Pounds.</i>	<i>Days in Milk.</i>
First . . .	7	Holstein	10/14/'01	7,641	3.22	246	287	336
Second . . .	8	Holstein	11/8/'02	11,445	3.40	389	454	365
Average for two years				9,543	3.33	318	371	350

Alfrida, the best cow in herd F, did considerably better in her second year than she did during the first. At the beginning of her second year she was officially tested but failed to qualify, making only 11.9 pounds

of butter fat in seven consecutive days. Notwithstanding this she gave 11,445 pounds of milk and 389 pounds of butter fat, which made 454 pounds of butter. While Check the year before was officially tested and qualified, making 12.2 pounds of butter fat in seven consecutive days, yet, she gave during that year only 6,812 pounds of milk and made only 215 pounds of butter fat, and 251 pounds of butter. In other words, Alfrida failed to enter the Holstein-Friesian Advanced Registry, but produced 4,633 pounds more milk and 174 pounds more butter fat in one year than Check, that entered the Holstein-Friesian Advanced Registry. Moreover, Alfrida's average record for the two years is greater by 3,399 pounds of milk and 18 pounds of butter fat. The point is, does one week's record in a whole year give the true value-of a dairy cow?

It is plain to every thoughtful man that we must be guided by yearly records and place but little, if any, confidence in the weekly test. But we must not stop with one year's record and base our selection upon one's year work.

While the scales and Babcock test can be of great service in the selection of our dairy animals, they must, however, be used with judgment. Dairy cows have their "off years," and this must be considered when the herd is being culled. If we do not bear this fact in mind, we are apt to sell some of the best cows from our herds. The writer has in mind the cow Sweet Briar, of the Minnesota Experiment Station, that produced for ten years an average of 358.07 pounds of butter a year, while in 1898 she produced only 206.62 pounds of butter, but in 1899 she made 306.53 pounds, and in 1901 370.53 pounds. If the merits of Sweet Briar had been wholly based on the work she did in 1898 she would have been classed as a very ordinary cow, and perhaps sold. The great value of scales and Babcock test lies in their continued use in the dairy herd and not in one year's test. Good heifers usually come from the best dairy cows, but it sometimes happens that a promising heifer may do very poorly for the first year. In such cases the heifer's individuality, together with her breeding, should be considered before she is sold. The testing of cows should, however, be carried on in every dairy if a systematic selection is to be made. A good cow seldom has two "off years" in succession.

In closing, let me present a few tables comparing the result of different cows and herds and also comparing the first and second year's work.

Table 1, comparing the average performance of the best and the poorest herds; also giving the average performance of all the herds tested:

	<i>Milk,</i> <i>Pounds.</i>	<i>Fat,</i> <i>Per Cent.</i>	<i>Fat,</i> <i>Pounds.</i>	<i>Butter,</i> <i>Pounds.</i>	<i>Days in</i> <i>Milk.</i>
Best herd	6,444	4.17	269	313	330
Poorest herd	4,613	3.71	171	199	271
Average of herds	5,261	4.06	214	249	300

Table 2, giving average record of the cow producing the most butter fat of all the cows tested, for two years and average record of the cow producing the least butter fat:

Name of Cow.	Herd.	Milk, Pounds.	Fat, Per Cent.	Fat, Pounds.	Butter, Pounds.	Days in Milk.
Pet, best cow.....	N.	7,190	5.10	367	428	315
Joe's Bride	F.	4,560	2.96	135	158	274

Pet of herd N gave for the two years an average of 2,630 pound more milk, 232 pounds more butter fat and 270 pounds more butter per year than Joe's Bride, of herd F.

Pet, of herd N, has the highest average record of all the cows tested, and Joe's Bride, of herd F, the lowest.

Table 3, giving the total amount of milk and butter fat produced by the ten herds in the first and the second year, also the total number of cows:

Year's Work.	Cows, No.	Milk, Pounds.	Fat, Per Cent.	Fat, Pounds.	Butter, Pounds.
First	160	791,088	4.057	32,099	37,449
Second	145	813,586	4.081	33,200	38,733

There were 15 more cows in the first than in the second year, but the 145 animals produced 22,498 pounds more milk and 1,101 pounds more butter fat in the second year than the 160 cows gave in the first.

Table 4, giving the average yearly production for all the herds that have been tested for two years:

Year's Work.	Milk, Pounds.	Fat, Per Cent.	Fat, Pounds.	Butter, Pounds.
First	4,944	4.06	201	235
Second	5,611	4.07	229	267

The percentage of increase in the second year per cow of the ten herds tested was 13.7 per cent. of milk and 13.9 per cent. of butter fat. In other words, the average increase per cow was 667 pounds of milk, 28 pounds of butter fat, and 32 pounds of butter.

Mr. Woollen: It seems to me that this would be a very great loss if we should allow this paper to go by without any discussion, for there are a great many people here who have had practical experience, and who are educated, and it has been my experience that the discussions oftentimes produce more good and a great deal more instruction can be gotten from them than from the papers themselves. I do not mean to reflect upon the papers this afternoon, because they are high class, and for this reason they should bring out discussion. Of course we must have these papers in order to have the discussion, but, after all, there is a practical side to farming. I am a dairyman only by proxy, but I enjoy seeing two or three

men of opposite views get up and give reasons for their views. In this lies the life and instruction of the meeting. It seems to me that this paper should not pass without a discussion.

President Johnson: If there is no discussion on this subject we will pass on to the next "Lessons from the Herd Test at St. Louis," by Harry Jenkins, of Indianapolis.

I have just received word from Mr. Jenkins that his father is sick, and that the rush of work will compel him to be absent from these meetings, but Mr. Van Pelt is here and at my request will make a few off-hand remarks. Mr. Van Pelt fed the Jersey herd at the St. Louis test.

LESSONS FROM THE HERD TEST AT ST. LOUIS.

BY HUGH G. VAN PELT.

(Edited by Secretary.)

Mr. Van Pelt called attention to the fact that many valuable lessons can be gotten from the work at St. Louis, that in seeking these lessons it must be borne in mind that the conditions under which the cows were of necessity kept, was radically different from ordinary farm conditions and that due allowance must be made for these conditions. At the same time certain vital principles were manifest and are not influenced by the surroundings.

The average annual production of butter fat of the Indiana cow is about 150 pounds in 365 days. The poorest cow in the St. Louis test gave nearly that much in 120 days. The poorest Jersey exceeded it by 70 pounds in 120 days, while the best Jersey produced 30 pounds more than double that amount in 120 days. Selection of the animal, its ancestry, care and feed given it and its manner of handling are responsible for this much larger and more economical production.

One of the first lessons to be learned is that the unprofitable cows in the average herd should be gotten rid of and in their places should be kept only those having larger ability to convert the feed eaten into profitable returns.

The cows selected for the Jersey test were gotten together some time previous to the opening of the test in order that they might freshen under the conditions in which they would have to work, in order that the feeders and milkers might become acquainted with the individual characteristics of the several cows. In this test much attention was given to the peculiarities and individual characteristics of each cow. In this preliminary period special attention was given to getting the cows dry in order that

they might have a rest before the severe strain that was to be put on them began, to allow the cooling of the system and rest for the digestive tract, adding strength and flesh. One conspicuous lesson was the value of oxygen treatment for milk fever. Every cow which suffered from this dreaded disease was carried safely through and made a very creditable record.

Mr. Van Pelt thinks that the results secured at this show with alfalfa hay and silage emphasize the practical importance of allowing the cows to run dry during the season when she may be on grass and cheap food, at the time when she is not producing, when the grass is naturally cooling and its effect is particularly desirable. The calf born in the fall can be carefully wintered and ready to go on grass next spring, doing well the entire year. "The cow will yield from 10 to 20 per cent. more milk in a year and produce a larger amount during the season of high prices. Without exception the cows in the Jersey barn carried all the fat that could be placed on them without resorting to heavy feeding and useless overtaxing of the digestive tracts. During the resting period bran was used to a considerable extent because of its bulk and cooling nature, and proved its value. Oats were used extensively to impart strength and stamina and it will be found before we have advanced far in the feeding of cows, that oats have a feeding value for dairy cows and are in advance of that indicated by their composition and digestible nutrients. Oil meal was used in a limited way, aiding digestion. Corn meal was tried and used for its cheapness and fattening qualities. Our first rewards came with the calving of the cows. Each of the 41 cows had strong and vigorous calves and every one of them was sent home to its owner save one that received injuries from falling in play. We could not have expected such results had we allowed the cows to milk up to the day of calving without rest and plenty of muscle and bone-forming food from which to nourish the embryo calf.

"I am thoroughly of the opinion that the future usefulness and greatness of the animal is not so much influenced as by the treatment and nourishment it receives while in the dam, and no doubt most weaknesses experienced with dairy calves are directly due to the improper care and feed of the pregnant dam."

A skilful feeder who finds his cow responding to the feed must be careful not to crowd her too fast or increase her feed once too often. If this happens it is almost impossible to get her back to her best work. Every cow has two limits to her feeding qualities. First, there is a limit to her capacity, that is, the total amount of food she can possibly eat. Secondly, there is a limit to the amount of food eaten that can be made use of in keeping up her energies and producing milk. All foods supplied between these limits are worse than wasted, because it not only gives no return, but once in the stomach, it requires extra work for the cow to rid herself of it. To find the limit is a problem confronting the feeder, for only expe-

rience and close observation and study of the animal will determine, and seldom if ever, is there a feeder who will not overstep the bounds, for the reason that we sometimes find cows whose capacity is less than their ability to convert food into milk. This, however, is a rare occurrence.

In this test it was shown to be profitable where they were trying to secure the maximum, economical production, to study each cow's likes and dislikes, how and when she was watered, exercised and milked and which feeds she liked best. One cow was particularly fond of alfalfa hay and would eat more by far than any of the others, which, with corn and oats, would produce the best results at the pail. All of which suggests the importance of giving much more attention to the individual than is the common practice. Knowledge of the individual, her requirements and her returns is the key to success.

Prof. Plumb: I think there is some danger of the college men leading us to believe that it is all in feeding, and I fear that before some of these folks get out of here they will wonder where they are at after this discussion is over. In my address that was the point I tried to bring out—that the cow herself was the first and most important thing, and the feed second to the cow. You must study the individuality of the cow. There is not an experiment station in the United States that would propose or attempt to tell you just what the rations should be for each individual cow. I believe in a special combination of rations. For example, you have corn, bran and oats, and some other things are good, and when you have mixed these up you have got a good ration, but you will have to make changes for some animals according to their individuality, and this you will have to study out yourself. Sometimes you will have to feed seven pounds of this mixture to one animal and nine to another. You must feed the animals according to their individual needs. Down in St. Louis they tested each different animal as thoroughly as possible to bring out her individuality. They had one person to look after this alone. There is always a question from the dollars and cents standpoint. It seems to me that a man that has a number of cows can afford a man to look after the feeding of his cows, and to study out their individuality. In the long run it will pay him from a dollar and cents standpoint. We must study the question of prices. It seems to me that this is the only thing for a layman to do. You must find out whether or not you are making anything off of your butter. You must figure out what your butter fat is costing you. You must also study your conditions. When it comes to feeding your cows the more individuality you put into it the more you will accomplish. It makes a great difference with different people as to what the cows will produce.

Mr. Wood: I have been in the dairy business for 15 years, and I think a whole lot of this talk does not fit our case in the least. Every farmer

in this country has food stuffs in his barn. I have a half gallon tin which I measure bran in. I know just about how much each cow ought to have. I have been testing this method for a long time. We can make conditions suitable to our own herd and I can feed my herd better than any one else. I have been watching these matters. This settles the question with me in regard to the breeds of common cattle. I want to tell you that it is every day practical business to attempt to feed cows. You must learn something about the balancing of rations. Some think it is better to sell the corn and buy bran. There is a good deal to learn.

Mr. —: I should like to say that I don't know very much about the science of cow feeding, but I have fed enough to know that we must have a balanced ration to make good cows. I think Prof. Plumb was right in what he said. You do not just want to commence with the cow, but you want to begin with the heifer. There is a good deal in bringing up the heifer. Begin early.

Mr. —: I do not like the method of using the tin cup as a measure. It would take twenty years to find out with that what you could find out with a pair of scales in a week.

Mr. Wood: I want to say in regard to the tin cup that I have used it until I can guess within a few ounces of what I have, and I can do it so much quicker than to have to take the scales.

President Johnson: It is growing rather late, and unless there is something important to bring up in connection with this subject, I think we had better pass it.

Mr. —: I should like to ask what is the value of cotton seed meal compared with Buffalo gluten meal, and how much should be fed at a time?

Mr. Van Pelt: Cotton seed is 39 per cent. protein, and the Buffalo gluten meal is 24. I would not feed over two pounds under ordinary conditions. It would not pay. It is usually very expensive and a pound will add a great deal of protein to the rations.

Mr. —: It is not as expensive as the Buffalo meal. At least that is what I found out when I went to buy it. The cotton seed is \$22 and the Buffalo is \$24.50.

President Johnson: This afternoon there was a private buttermaker asked me if she could have the privilege of bringing her butter here in the morning and have it tested that she might know what was the matter

with it. She would not bring her butter to compete for the prize. I assured her that she was welcome to bring her butter, and that the butter experts here would tell her what was the trouble with her butter. I believe it is one of the things that every buttermaker should know.

Secretary-Treasurer Van Norman: We only have an hour and a half in the morning, so let's all be on time and do all we can in that time.

President Johnson: If there is nothing further to come before this meeting at this time we will stand adjourned until 9:00 o'clock tomorrow morning.

(The meeting stood adjourned.)

In place of the usual evening session a banquet was served in the Hotel Denison, to which 86 members and friends of the Association sat down. A number of informal toasts were responded to, Dr. Woollen of Indianapolis acting as toastmaster. Prof. Plumb, now of the Ohio State University, a charter member, three times President and once Secretary of the Association was a guest of the Association. This banquet custom began three years ago and has become a regular and pleasing feature of the annual conventions.

FRIDAY MORNING.

President Johnson: I think it would be advisable for those interested in the butter scoring to get as close around this table as possible.

P. H. Keiffer: I have had the pleasure of going through this butter with Mr. Slater, and I am pleased to say that I found the butter much better than I expected to find it when I came here. Away out in the Western States of Iowa and Nebraska we think we are the whole thing in the butter business. I see that the manufacturers of butter in this State and the milk producers who make butter here are right in line—they are on the right track, and are guided right—and I must tell you right here that the butter is much better than I expected to find when I came. I expected it to score from about 92 down. It is better than that; it runs from that up, and this is very pleasing to me.

We haven't very much time, we are late in starting and I'll try to hurry along as fast as I can. Now Mr. Chairman, I think it would be better for each one of the people interested to taste the butter.

Prof. Van Norman: We will make this something of a school and pass the score cards around and let each person that feels like it score the butter when it is passed around, then when the score is given you can compare yours with it.

Mr. Keiffer: If anyone tasting this butter feels like putting a score on it I should be glad to hear from them. For those that do not know how this is done I will tell you: One hundred is perfect; flavor counts 45; texture and body, 25; color, 15, which should be uniform; it should not be streaked or wavy in spots; and if you eat the butter without noticing particularly about the salt it is perfectly salted and would be allowed 10 points. If it is not perfect in salt it will remind you that there is too much or not enough salt. Perfect package is allowed 5 points, and taking all together it makes 100. We will not cut on the shades of color in the butter because there are light shades and dark shades, but the shade should be uniform; it should not contain streaks or spots, and if it does it should be cut down in color. Butter must not be churned at a high temperature, as it makes it spongy, and should be cut accordingly if it is. It should have a nice creamy flavor. When you eat the butter it should remind you of good fresh cream, or good fresh milk; that is what we call the creamy flavor. As a rule judges will not give perfect on flavor because none of them want to go on record as saying it is up to the height of perfection, and that it can not be improved, but we give pretty high gradings on flavor. There is considerable butter scored at 43, which is within two points of perfect, and the flavor is cut in proportion to what you estimate in your mind it would be if it were ideal in flavor and had a good milk or creamy flavor. If you find some other flavor it is caused by some bacteria which got in before the butter was churned. It will show up in the butter after it is made. When we give the score you can think in your own mind how near or how far away from the score you were.

There is considerable on the program this morning, so we must hurry along. This butter scored a total of 94 points. It scored 39 on flavor. You will see it was cut six points on flavor. It scored perfect on body and on the workmanship, and was perfect in color and salt, but there were six points taken off on flavor. When it becomes known that the flavor was what the butter was cut on I think we will be able to get the flavor which we want. Butter that will score 93 is graded as an "extra," and will go on the markets of the United States for the highest price, and when it goes to a house and their expert says that the butter scores from 93 to 94 they must take the butter. There is no way of getting out of it. They can not then dodge out of the contract after it scores 93. This is good butter, and the man that made it understands how to make butter.

This butter here was worked too much, which made it greasy. It then has a flavor that you don't like. I saw a lady make a face when she tasted it. This goes to show that you are all judges of butter, and you must make butter which you would like to buy. That butter is a trifle rancid: the cream was held too long—the cream was old, and the maker did not get a chance to do his best, because the raw material

was not what it should have been when he made it, nevertheless he has overworked it and made a mistake in that way. It scored 33 on flavor because it was not good on flavor. It would not be desirable butter to have on the table. It is a low "first," it would not go into the extra class at all. If this butter were on the New York or Chicago market it would be turned down; they could not sell it. Now, the first trouble with it is the flavor. It has an off flavor; it has a trifle unclean flavor. It is butter that hasn't a creamy and rich flavor. The only way to obtain this flavor is for the raw material to be in perfect condition.

Mr. ———: How do you know when the butter is worked enough?

Mr. Keiffer: This is the way I find out when the butter is worked enough. A great many work it right in the churn. We work the butter all at one time. A few years ago it used to be worked more than once. With the inexperienced I think it is a pretty good plan. Work it a short time and then set it away until the salt disappears, and then work it again. When it is free from streaks you want to stop. When you work it any more you are working it too much. It will then have a salvy appearance.

Mr. ———: How much would you take off for that salvy appearance?

Mr. Keiffer. Just enough to call the maker's attention to it. Possibly a half point.

Mr. Millhouse: Will you please tell us what a half point is. This lady over here would like to know.

Mr. Keiffer: Well, I hardly know how to make it plainer. If the butter is perfect we give it 100, and if not, we cut off in proportion to what we think it should be cut.

Prof. Van Norman: May I say a word on this scoring? As you will see by the butter score card the standard is 100. Now, you are to place a numerical value on the butter. We have scales with which to measure the pounds, yardsticks with which to measure distances, but there is nothing of the sort by which we can measure butter quality, so we adopt this method of scoring. Our butter judges fix a standard in their minds, as Mr. Keiffer, who was a critic down at St. Louis, said to me, I divide the classes in my mind, and a certain class I will call 93 butter, and if it comes plainly into that class I will give it 93, and if it does not come up to these requirements in a small particular I drop one-half point, and if more than that, more points accordingly. Butter is marketed as extra, first, second, etc., and the extra butter must score at least 93 out of a possible 100. These points are a matter of judgment. At

St. Louis there were three judges, one from New York, one from Chicago, and one from Boston. I have seen them as much as three points apart on some particular lot of butter, and then run along for eight or ten tubs and not be one-half point apart. If they were very much apart they would go over it again and try to find where the difference was, and decide together. They would finally get together. Many times a commission man is a first class judge of butter, but he may not be worth anything in scoring butter. He has not had training in expressing his judgment in a numerical value.

Mr. Keiffer: This package here is the highest scoring package. Most of you had a taste of it last night. After it leaves your mouth you will notice it reminds you of sweet milk or cream. Its score is 96. The maker of that butter had good material, and understood taking care of that raw material, and turned out a fancy piece of butter. If any State in the Union could make butter like that they would have a cinch on the market.

No. 29 has a pretty good flavor. It is too salty, as you will find when you taste it. I think I will get the support of everyone that tastes that butter that it is too salty, because when you bite into it you think of the salt the first thing, and as soon as you think of the salt that shows that there is a defect in that respect, and the question arises, "How large a defect is there?" It seems to me there is a great one. If it were not for this the score would have been higher. The person that made this butter had good raw material and knew how to handle it, and then finally spoiled it by adding more salt than was necessary. It is so salty that it is gritty. You can bite the salt between your teeth. This butter is scored 38 on flavor and $24\frac{1}{2}$ on body. The salt injured the texture, and it was cut $2\frac{1}{2}$ per cent. on account of the salt. Of course some folks like to have their butter salty, and others do not, and so you have to salt it for the market, not for individual tastes. You must take into consideration what the general market demands.

No. 33 is a piece of butter that was made out of cream that was held too long at a cold temperature before lactic acid bacteria went to work, so that it acquired a bitter flavor. You will notice it decidedly; when in this condition it takes longer to churn. That butter is cut 11 points on flavor, giving it 34 for flavor; it would be a poor first on the market. First means butter that scores between 88 and 93, and this simply gets into the "first."

I am informed that there was a package brought in pretty late this morning that someone wishes scored. I will do that now, and put the score on it.

You will notice that this is a different style of package, it is put in such a shape that it makes you think of limburger cheese. It is not the style of package that the market demands. The package will

cut from its value. I like the creamery packages best, and there is no law that prohibits you from making yours the same. It is a commercial package. If you should ship butter like this to Chicago you would not get as good a price on it as you would if it were in another kind of package, even though it is the same kind of butter, and as a consequence you would lose money on account of the style of package. This butter was made under what we call "natural conditions." The cream was allowed to ripen naturally without any aid from inoculation. It has a rather coarse flavor which usually accompanies that kind of ripening. While it might be acceptable on the table it is not quite as nice a piece of butter as could be made with the proper treatment. I should give it 37½ for flavor, and workmanship perfect, which gives it 92½ score.

I want to say that the dairymen in this State are making good butter. I am surprised to see the quality of butter made. All of this butter shows good care.

President Johnson: I should like to say a word. There is butter sold here in Indianapolis on the market. The butter is in prints the same as this, and then is wrapped in parchment paper, and enclosed in a pasteboard case, and is marked "Renovated butter." I should like to ask what sort that is and where it gets its name.

Mr. Keiffer: It is butter made out of what we call "ladel" goods. For instance, you take a poor dairy where butter is made on the farm and you get butter that scores about 87 to 89. That is not fit for the table, and this butter is taken and melted, and then air is blown through it to drive out the odors, then it is put into ice water, and made in the right form, then salted, packed, and sent out as renovated butter. Renovating takes out some of the bad flavor and makes it uniform. When it is put out from the dairy one tub may be pretty good and another one bad, but when renovated butter is put on the market it is all alike. It is uniform in grade and the quality has been improved. I think it brings five cents a pound less than creamery butter.

Prof. Van Norman: I should like to say that we are sending out of this State thousands and thousands of pounds of country butter that go into the market for 10 to 14 cents, and the grocer sells it for three or four cents higher, and it goes to the renovating factory. The huxters go over the country and gather up all kinds of butter, some good, some bad, and some indifferent, and send it to the renovating factories. Much of the finest butter used in our State is bought outside of the State. If you go to the leading stores in Indianapolis that cater to the carriage trade you will find that they go out of the State for much fancy butter. You will find this is true in Lafayette, Ft. Wayne and some of the other cities. This emphasizes what I have claimed for eight years. We

make too much low grade butter. You will find that groceries in Lafayette paying 18 cents for butter that they sell to the renovating factory for eleven cents. They lose on the butter, but the farmers buy their groceries of them, possibly \$10 or \$12 worth, and in that way they get even. Of course the groceries cover the loss on the butter. This is where the farmers are losing money all the time. If you can not make butter right, only make enough for your own table, your own use. The market wants good butter. Elgin butter is quoted at 29½ cents today, and there is not enough of the best on the market to supply the demand.

Mr. Miller: I should like to hear about butter from the time you take the milk from the cows until the butter is ready to be sold.

President Johnson: Yesterday was devoted to handling milk and butter, and our time is passing rapidly.

Mr. Miller: I have not heard anything of that yet.

Mr. Scott: I want to know something about a starter. What is it, and can butter be made without it?

Mr. Keiffer: Certainly it can be made without it. A starter is used in order to hasten the ripening; it inoculates the cream and hastens the ripening. If you can not churn every day you can keep your cream in a good, sweet condition, until you have enough for a churning, and then raise the temperature to 65 or 68 degrees until the cream sours and you will have good butter unless it has been exposed to some unfavorable bacteria.

Mr. Scott: How do you get the starter?

Mr. Keiffer: There are several kinds of commercial starters on the market now. You can make a starter by taking good fresh milk and setting it away at a temperature of 75 degrees. Hold that sample at 75 degrees and it will become thick in twenty-four hours, or possibly thirty-six or forty hours before it becomes thick. If it is in a Mason jar, after it becomes thick you can look at it, and see whether or not it is full of pin holes. You can tell from the smell whether or not it has a nice, pleasant sour flavor—no foreign flavor—and if so, you can rest assured that you have a good starter right there, and take a spoonful of that and add it to a quart of pasteurized milk. After you pasteurize your milk, do not take chances of contamination by exposure. Of course it must be cold. By pasteurizing I mean to heat the milk to 180 or 200, and hold it there for about twenty minutes, and cool it down by placing it in ice water or cold water, and when it gets to about 90 degrees add one tablespoonful of the starter you have prepared and that cream will change in about 18 hours, so that it will be thick.

Mr. Wilson: There is one thing that Mr. Van Norman said about the farmers and their butter that I think is very true. When there is a creamery in your neighborhood you should patronize it. When you go to the grocery what do they do for you? They will buy your butter at 18 or 20 cents a pound and probably sell it at 10 cents. Now, where do they make their profit? They sell you your groceries, and I can assure you they do not lose money on you, even though they do pay you more than your butter is worth—even though they do get your butter for 20 cents and sell it for 10 or 11 cents. Why do they do these things? It is simply because they want to keep your trade. They certainly in a case like that charge more than they should for their groceries. When there is a creamery established in your neighborhood and it will only pay you 15 or 16 cents for your butter, and the grocery man will pay you 20, you had better sell to the creamery man, for in that way you will get a market for your cream and milk and you can then take your money and buy your groceries wherever you please. I think you are wise to patronize the creamery.

Mr. Glover: I should like to say a few words in regard to the cheese. This cheese has a good flavor, and is firm and mellow and rich, and has a very good body. I should say that the milk which went into this cheese was very good, and the cheese would keep a long time without becoming strong. If we could have this kind of cheese on the market continually we would eat ten times as much cheese as we are now eating. There is no danger in overproduction of cheese of this quality. In Ft. Atkinson I have been able only once to select cheese that is anywhere equal to this cheese. If better cheese were made more people would eat it.

President Johnson: I am sorry to stop this discussion, but we must hurry along this morning.

CRITICISM ON EXHIBITS BY MESSRS. KIEFFER AND SLATER.

Tub No. 1. Flavor a trifle unclean. Butter also shows up a little salty, as though it had been a trifle overworked.

Tub No. 2. A good piece of butter.

Tub No. 3. Flavor very flat. Milk should have been ripened a trifle more to produce lactic acid flavor. Body very brittle, indicates that it was churned at a high temperature and immediately chilled.

Tub No. 4. Flavor a trifle unclean, has a coarse flavor, indicates that cream was ripened at too high a degree of acidity.

Tub No. 5. Butter has an old milk flavor, as though milk was held in unclean cans for some time. The use of live steam for the heating of milk also produces an unclean flavor. Body weak; indicates that the butter was a trifle overworked.

Tub No. 6. Flavor is a trifle on the bitter order, otherwise a good piece of butter.

Tub No. 7. Butter has a lardy flavor, possibly due to frozen milk. It has also a flavor as though considerable oil meal was fed to the cows. Cream should have been ripened to a higher degree of acidity, so as to produce more lactic acid. Indications are that your butter was a trifle overworked.

Tub No. 8. Flavor very unclean. Indicates old, overripe cream. Butter rancid. Butter salvy, overworked. Too light in salt. More salt would have been a benefit.

Tub No. 9. Flavor a trifle unclean and has too high an acid, what we call a coarse flavor. Cream was ripened at too high an acidity. It seems to be too fresh for scoring. Body greasy, soft, indicates overworking.

Tub No. 10. Has a trifle unclean flavor, also shows that cream carried too high degree of acidity, indicates cream and milk were kept under unclean conditions. Trifle aged.

Tub No. 16. Butter has unclean flavor, indicates old cream. Cream and milk should be delivered in good sweet condition in order to make a good piece of butter. This butter is too fresh for scoring. Body is weak and salvy. By fresh butter we mean butter that is being scored too soon after being churned.

DAIRY BUTTER.

Tub No. 26. Has a tallowy flavor.

Tub No. 27. Flavor unclean; has a foreign flavor. Butter mottled. Should have been worked a little more.

Tub No. 28. Has a decided foreign flavor. Something on the paint order.

Tub No. 29. Very badly oversalted. Has hurt the body and flavor.

Tub No. 30. Flavor good; badly mottled. More working would have overcome that.

Tub No. 31. Some silage flavor.

Tub No. 32. Flat. More salt would help. A little acidity in the cream would help.

Tub No. 33. Bitter. Due to cream being held too long at low temperature before churning

THE VALUE OF EDUCATION, READING, AND SCORING
CONTESTS.

EARL MARTIN, NEW CARLISLE.

Winner of Two Silver Cups.

Within the past few years, many changes have taken place in the art of buttermaking. Some years ago when I took my first steps in the great industry, I knew but little of what was before me. At that time almost any one who was neat and clean and had some knowledge of how to operate ordinary creamery machinery fairly well, how to ripen his cream, when and how to churn and work butter, was considered a first class man, and could command \$40 to \$50 per month. The same man today is still laboring along in the same old way, and making a very poor grade of butter, and still gets the same old pay, but some of these men have woken up and can see that they must get out of the old rut or go under. They have seen by what others are doing that they must get into the collar and go to some dairy school where the art of buttermaking is taught in every detail by the best men that our great country can produce. We find in most cases the man who has taken the course and one who studies and works are the boys who are getting the silver cups and medals and from \$75 to \$150 per month. We can not expect to get to the top in one year, but by study, work and stick to it, it will come.

The buttermaker of today must have the get-there spirit in him, if he expects to make it a success, as success in any business never comes by chance or luck. Chauncey Depew being asked by a young man to give the secret of success, replied: "My boy, there is no secret to it; it is just dig, dig, dig." So it is with the buttermaker, if he expects to succeed he must dig, dig, dig.

I will give a little of my experience in the past few years of how I have worked up from \$35 per month. The first four years I knew nothing of starters, acid tests or bacteria, and what influence they had on the product. By this time I had read some of the dairy papers, and had seen what some of the boys were doing by using starters and acid tests, and knowing how to use them. About this time Mr. H. E. Van Norman, professor of the dairy school, called on me and explained to me how I could benefit myself by taking a course at the dairy school, which I concluded to do that winter. The expense was small and the returns great. It has increased my salary to \$95 per month, and the creamery company is getting from $\frac{1}{2}$ to 1 cent more per pound for their butter. Buttermaking without the use of starter is like making bread

without good yeast—it lacks the good taste. But first you must know how to handle and make good starters. Without the education in bacteria growth you are lost. You must know when you have got the kind of flavor producing bacteria, which gives to the butter that fine, sweet flavor. Next, where and how are we to learn the use of these starters. You can read the dairy papers and learn how this buttermaker made his high-scoring butter, and another, how he won a silver cup, and so on. But still you are not satisfied, because you have not had the experience in handling them yourself.

Now boys, don't be satisfied until you have taken a course in the dairy school, where you can learn how to make and handle starters, and can see the different kinds of culture and educate your taste so as to be able to tell when you have got the right kind of bacteria. Then go back to your factory and roll up your sleeves and go to work in good spirit, knowing that by work and study you can win the silver cup and not be afraid to class your butter with the best.

The dairy papers also do a great deal towards educating the buttermaker. I can not see how some of the boys get along without them. You may visit the creameries in any State, and where you find an industrious, up-to-date buttermaker, you will find on the office desk dairy papers of all descriptions. That is the kind of boys we want more of. When you get through with your day's work, it is a pleasure to take up your dairy papers, and see what the boys are doing around you. I am safe in saying there is not a buttermaker in the State of Indiana that can not be greatly benefited by reading more of the dairy papers. Another great educator is the scoring contest. There is not enough interest taken in the scoring of your butter. I once heard a buttermaker say that he did not believe it was of any benefit to him. If you could see his factory you would think he could be greatly benefited by it.

It has been a great benefit to me I can assure you. I think I am safe in saying that the scoring contests have raised the standard of butter in the past three years two points, especially in some of the Western States. It will do the same for Indiana if the boys will take hold of it and say, "We want a State scoring contest," and let the State Dairy Association give some inducements in offering a silver cup or medals for the highest average score.

Now boys, if there is any real buttermaking spirit in you, we can have a contest. If you wish to be at the top, first take a course at the dairy school, study and work, read the dairy papers, and don't forget to enter in the scoring contests, and you are on the road to success.

(Applause.)

President Johnson: We will now spend a few minutes in the discussion of this paper if you have anything to offer.

Silas Holloway: Do you use a commercial starter?

Mr. Martin: I can not get along without a commercial starter. I use them all the time.

Mr. Holloway: Have you any special choice as to kind?

Mr. Martin: Well, no. I think they are all good. I think when a man gets used to one kind it is better for him to stand by it, and use it all the time.

Mr. Holloway: How long will a commercial starter last for you?

Mr. Martin: I do not like to use them too long. They sometimes get slimy after they get too old. It seems to me it loses its life.

Mr. Holloway: How long can you carry a starter without getting a new one with good results?

Mr. Martin: Well, I have carried them from one day to six weeks. It all depends on the starter. Some of them are not right when you get them. Of course as soon as you try them the first time you can tell whether it is right or not. I have sometimes used a starter for six weeks with pretty good results, but I would not advise you to try it, but I have done it myself.

Mr. Holloway: Haven't I heard of persons using a starter for six months? It seems to me so.

Mr. Slater: I made that statement myself and I think I have done a good deal of harm by saying that. I went to a creamery this fall, and the man was putting a starter into his cream. You could smell it before you got to it. I told him it would spoil the butter, and he informed me that I had said a starter could be used six months and he had used it only four or five months. Now, this starter would have spoiled any butter that you inoculated with it. I am very sorry I made such a statement and am trying to correct it now.

Mr. Hursh: I have a ripening vat, and we separate our cream into four different cans six inches in diameter, and when we get ready we put the cream into a ripening vat and turn on the steam until it reaches about seventy-five degrees. This is necessary this time of year. When it is ripened sufficiently we cool it down possibly 12 hours before churning. We do not put in any starter, possibly it would be better if we did, but would you advise it under these circumstances?

Mr. Martin: I would not advise any one to leave the starter alone. I do not think there is a piece of butter but what would be benefited about two points by the use of a good starter.

President Johnson: Well two points are certainly of value.

Mr. Martin: Before I knew its value I had never secured a score higher than 94, and I am sure the raw material was just as good as I could have had, but after using it I am sure I could raise it two points. I do not have as good raw material now as I had at that time, but I have been able to make butter that scored higher.

Mr. Hursh: Would you advise us to use a commercial starter or the one that Prof. Keiffer has told us about—the ones that we could make ourselves?

Mr. Martin: I think he had reference to a commercial starter.

Mr. Keiffer: No, I had reference to what we call a home-made starter. I would advise you to set several samples of the best milk for starter, and then pick out the one that you think is the best. I would not like to advise you definitely in regard to the use of a starter, because we do not know all of the conditions under which you are working. Sometimes the cream itself will bring about the lactic acid change, even without any inoculation of other bacteria. You can make good butter with what I call a home-made starter.

Mr. Martin: I am not satisfied with the interest the boys are taking in the scoring contest. For my part I should like to see a yearly contest. Since I have been entering these contests my butter has been raised about three points, and in the last year I have been scored something like 32 scorings, and I have learned from every scoring. I should like to see the boys of this State take it into their hands and send the butter which they produce down to Mr. Slater, who will score it, and will be very glad to, and his suggestions would be of immense benefit to us, and at the same time instead of giving the cup to the man that scored the highest at the convention, give it to the one that had the highest average score for 12 months; he is the man that is entitled to it. Any company would give you a pound a month to send away to be scored. It would cost you about 15 cents to send it down. Now, I should like to see the boys get at this. There is no reason why this State should not make just as good butter as any other. I am ashamed of some of the butter that is put out by buttermakers in the State. They do not seem to take any interest in what they are doing. I wish you would urge this upon the people when you go back home and get them to enter this contest. We want to shove these things along if possible.

Mr. Schlosser: Mr. Chairman, Ladies and Gentlemen—I think I have an important matter to present to you at this time. It has been touched upon several times during this meeting, and that is the legislative work. There is a movement on foot at the present time to secure an appropriation from the legislature for the benefit of our Agricultural Experiment

Station at Lafayette. It is not generally known throughout the State that our experiment station is supported entirely by a national appropriation of \$15,000 a year. We think of our experiment station as a part of Purdue University, and a great many people think that it is supported by the general fund, the same as the school. This is not the case. The experiment station is supported by \$15,000 a year from the national government. In 1887 there was a law passed giving every State in the Union the same amount. We find that the \$15,000 that we are receiving does not answer our needs. The buildings need repairing, as any one who has been there lately knows. We are handicapped seriously because we haven't funds. There are bulletins to be issued, but no money to issue them. The State Dairy Association at its last meeting appointed a legislative committee, and I was chairman of that committee. We discussed this subject of securing help from the Legislature, and after considering all sides of the question we have concluded to work with the other agricultural societies of the State to secure an appropriation of as much as we can get. At the present time we are working with the Corn Growers' and Live Stock men, and we have a joint committee preparing a bill to present to the Legislature within the next day or two. This matter is one that will require the assistance of every farmer in the State. The farmers of Indiana cast about 60 per cent. of the vote of the State—at least I am told so by a man that ought to know—and I suppose they pay about the same proportion of taxes, if not more, and if so, you can easily see where the farmers stand with the Legislature. We must have an appropriation if we expect to keep up with neighboring States. It will be absolutely necessary that the work of the experiment station be enlarged. The work will be excellent which will be done with this added money if we get it, and I believe we will if we make the right kind of an effort. We want the farmers of the State to help us. The committee can do all in its power and yet will not accomplish results by themselves, but the individual work of every farmer in the State is wanted. Every man and woman here has some influence. If they would drop a postal card to each representative or see them before you leave town—interview them, and tell them that the farmers want and must have it, and that we are going to get it—if you will go to work in that way we will get it, but we shall fail if you leave everything to us. You must not expect the committee to do everything. If you would take it upon yourselves to see the representatives personally we might accomplish this easily. The legislators would not think of turning down the farmers. I want to present this matter at this time so that you can see the legislators before you leave town, and help us along in this work.

President Johnson: Do you know what our neighboring States are doing?

Mr. Schlosser: Illinois has \$85,000 for the benefit of the experiment station; Ohio has \$61,000, and we ought to have more than we are asking.

If these States can get this amount of money we ought to be able to get \$25,000 a year. This is not as much as the other States are getting. We could get the same help if we would make our wants and wishes known in the same way that the other States have. They made theirs known in an effective way. We have the power within our hands to get whatever we want. The farmers in the State do not realize the influence they have, because they are not united and organized. If the railways had the influence that the farmers have they could do anything. Of course we want a committee to push this work. We want help.

President Johnson: May I suggest that the best time to tell the representatives things like this is before election; if you wait until after they are elected I fear you will get left.

Mr. ———: If we wait until they are elected again we will have to wait two years longer, and a great many of these men will not be dead in the next two years, and they will want to be re-elected, and for that reason they will listen to what you say when you come around.

Mr. ———: I do not know whether they can think two years ahead or not.

President Johnson: Those people are elected to represent the people, and it is our business to let them know what we want. They are the servants of Indiana; that is what they are for.

Mr. Billingsley: I have been before our legislatures in different capacities for a number of years—for the Dairy Association, the Poultry Association, and other associations, and they gave the State Board of Agriculture an appropriation to help carry on the different associations. I have been before them so many times that I have begun to despair of getting very much, for I know what they will say to us. The general opinion is that they do help the experiment station, which is not the case. They are absolutely indifferent, and I think this should be presented to the Legislature that it is not for Purdue University, and see if they will not help us out in this respect.

Mr. Schlosser: This State Dairy Association is a large association. We have ten members on the committee and I shall read them to you. They are as follows: J. M. Knox, Lebanon; J. W. Drischel, Cambridge City; T. C. Burnside, Liberty; J. J. W. Billingsley, Malott Park; C. B. Benjamin, LeRoy; S. B. Woods, Crown Point; George Freese, Nappanee; G. B. Swan, New Washington; I. C. Calvin, Kewanna.

These gentlemen come from the different parts of the State. Now, I certainly should appreciate it if the farmers of the State would take this matter up and help us. If you hear of anything that would help us in this matter, kindly let me know and I will look it right up.

Mrs. Woolen: If in order, I should like to move that Dr. Hurty of this city explain the pure food laws to this meeting, and tell us why they are not enforced in the State of Indiana. I am told that Mr. Hurty can be here at any time after 11:00. I should like to make this a motion, that Dr. Hurty talk to us on the pure food laws, and tell us why they are not enforced here.

Prof. Van Norman: It seems to me we ought to finish the other subject first.

Mr. Drischel: I think this matter should be urged upon every member of the Association. We should impress the farmers by having it in the local papers, and I am quite sure it would have some effect. I should like every farmer to send his Representative a postal card within the next 10 days, telling just what he wants.

Mr. Knox: I would suggest that a strong resolution be passed at this meeting. I also suggest that the committee on resolutions make a strong resolution and bring it before this meeting, and let it be passed by a unanimous vote, urging the Representatives to act favorably in regard to this matter, and then have it put in every paper—in every horticultural and agricultural paper, and the papers at all the county seats, and especially the dairy papers.

Prof. Van Norman: The experiment station stands ready to do any work in the way of agricultural investigation for which funds are provided. They have no funds to do anything more than they are doing, and if the farmers of the State of Indiana want work done along the line of field work, dairy work, or anything of the kind—feeding animals, or anything of the sort—we are perfectly willing to do these things if the funds are provided. All that is needed is the funds, for the executive heads stand ready and willing to do whatever they can do. I think this should be done in Indiana. And it would be done if the farmers would furnish the money to carry on the investigation. In Illinois the farmers decided that they wanted this kind of work carried on, and they appointed a committee which went to work and showed just what they wanted done, and they got over a quarter million dollars from their legislature for the different branches of agricultural investigation and education.

The creamery interest took the lead in the fight against oleomargarine in this country, requiring that it should be sold only on its merits. They had to fight the strongest and largest trust and corporation in the United States, with an unlimited amount of money back of it. Everything that could be done by the use of money was done in behalf of oleomargarine, but in spite of this fact Congress passed a law. Why? Because the dairy people made it known, by correspondence and postal cards, that they wanted that law passed. I remember that when it was finally about

passed, through some mistake the rumor went out that the affairs were going wrong, and the word was telegraphed all over the country, "Send in postal cards." This was done and after the law had been practically passed Congress was flooded with postal cards and other communications and expressions from the dairymen of the United States. They commenced it again this year when it was understood the oleomargarine interests would ask for a modification of the bill passed. I speak of these things to show you the power the farmers have when they unite—when they act in mass. If the farmers of Indiana would send in these cards by the thousands they would get any reasonable thing they want. Of course if the legislators, on account of their position and knowledge of affairs, think it is best to hold off a year, we must abide by what they say, but they will do the best that can be done for us if we will send in our cards and tell them just what we want.

President Johnson: Perhaps enough has been said on this subject. There was no second to the motion of the lady in regard to Dr. Hurty. Do we care to hear him speak?

(Motion carried.)

Mr. Rowe: I wish to state that he is now here, ready to speak to us immediately. I think we ought to hear this man.

Mr. Slater: We must hear Mr. Keiffer before noon, as he is obliged to go away this afternoon, and we have brought him all the way from Iowa to talk to us and we must hear him while he is here.

President Johnson: I will give five minutes to Dr. Hurty.

Dr. Hurty: I do not wish to take your time, but I presume you would like to understand while we are on the question why the pure food law of 1899 is not enforced. We have one of the best pure food laws anywhere to be found in any of the States, yet it is only laid down upon the statute books and is not enforced, and they expect the State board to enforce it. I take it that you are all interested in this question. There are many impure foods on the market here, but we can not enforce the law. Now, this tells the whole story. Every Legislature has had that law up since 1899, and have been asked to enforce it. There is much adulteration going on in Indianapolis, but we can not go ahead and stop it. Of course under the present arrangement of things it will go on unenforced for the next two years. The fact is that from 40 to 50 per cent. of all the foods put on the market are adulterated. The fruit jars that contain fruit are not what they purport to be at all. They ship it in from Ohio here. They take glucose and

color it, add timothy seed to make it appear like fruit, and then label it pure raspberry jelly. They never saw such a thing as a raspberry. Those things that can be watered. Butter should not contain more than 15 per cent. of water, but when it comes to the showdown it will contain as much as 26 and 28 per cent. of water. It should not contain more than eight or ten, and, at the most, 15 per cent. of water. This reflects more or less on the dairymen of the State. I have heard no special kick, but I have gone into the market and found the watered butter. We should have experienced food chemists at work at all hours examining food and bringing prosecutions wherever we find adulterated foods. At Wabash, Indiana, we found a baking powder that was composed of 30 per cent. of clay. Think of it. I am told that one of our legislators is one of the attorneys that represents the firm that makes it. I believe the statement to be true. Now, do you want clay in your baking powder. You will see the influences that prevent the enforcement of the pure food law.

We tested the vinegar once upon a time, and out of 12 samples of vinegar that were sold for pure cider vinegar there was not one found as represented. All were made by oxidizing alcohol, and such product is known as whisky, malt or grain vinegar. Do you want to be treated in that way? Do you want to pay for pure cider vinegar and get whisky? There are so many things that they load with water, starch, etc. I appeal to you to help us call on the Legislature, and see in the name of economy, and in the name of righteousness, if we can not enforce the pure food law which we have. I thank you very much.

(Applause.)

President Johnson: The next subject on the program is

THE HAND SEPARATOR PROBLEM.

P. H. KEIFFER, ASSISTANT DAIRY COMMISSIONER, IOWA.

The hand separator problem is a pretty live subject especially in the State from which I come, and I suppose that is the reason I was selected to speak upon this subject. It is true that the hand separator is being opposed by the best buttermakers in the milk producing section of the country. And why do they oppose the hand separator? It is admitted that the skimmed milk is better directly from the cow for the calf than it is after it has been returned from the creamery in a sour condition. Admitting that, still the buttermaker is opposed to it, for the reason

that at the present time he can not make a good quality of butter out of it, because when the milk is delivered to the creamery it must be sweet in order to be skimmed, and the hand separator cream does not have to be sweet in order to dump it into the vat. This is where the trouble is, and is one reason why the hand separator is fought. The system is all right, but in the early stages of the hand separator it was started wrong. When it was first sold in Kansas, Iowa, and Nebraska, the agents gave the people to understand that all that was necessary for them to do was to run their milk through the separator and then they had done their work and would receive the best price for their cream, and moreover in order to make a sale of the separator they would tell the farmers that it was not necessary to wash it every time after it was used. The creamery would take the cream from the farmer in a poor condition, just whenever they got ready they would send it to the creamery, and sometimes the cream was in what we would call a "rotten condition" or "rotten cream." They did not complain to the farmer about this cream, but just let him go on in the same old way. What are the results? Three years after the industry was started they changed their plans. They did not say anything at first because they wanted to sell their separators and increase their business, and when they run across a small creamery that was particular about its butter and milk it was very easy to put them out of business, because if you bought a separator you could hold your cream until the can was full to save transportation, and then you could ship it in and get the highest market price. They have gone on three years, and what is the result now? They have control practically of two of the States—Nebraska and Kansas—and they have control of Iowa to some extent. They issue a leaflet that is sent to every one of their patrons and prospective buyers in their territory, and they are now telling them a different story. They try now to enforce the necessity for good cream and milk to make good butter. Here is what they say: "Permanent success in the dairy industry depends upon maintaining good prices for butter." I am sure none of us will question the truth of that statement. They go on and say: "This can only be done when good cream can be had for making the best butter, which is always in demand at the highest price." They never said anything of this kind until recently, and even told their patrons to hold their cream until their cans were full to save transportation. "First grade cream is cream that is sweet and fresh. This cream must have a desirable flavor and odor, and test not less than 30 per cent. butter fat." I dare say you have had an experience in the State of Indiana. How many received milk this morning that would answer these requirements: "It must be sweet and fresh, with no undesirable flavor or odor?" It is a hard thing to solve the hand separator problem. When they are so strict as that it is a hard thing for a dairyman to furnish them first grade cream. Now, they have another grade of cream. "The second grade of cream is a sour

cream that has no undesirable flavor or odor." Do you see what they are up against? This hand separator problem is going to be a hard one to solve. Do you see that they will not take cream which tests less than 30 per cent. butter fat. It would be a hard matter for the farmers to send in their cream so that it would grade under the first class. They now say, "Old, stale cream can not be used in making butter, and so is not desirable and will not be received." That is the whole business. They do not want it as soon as the separators are sold. They have found out by the use of large sums of money that they can not make A No. 1 butter out of this class of milk and cream. They spent large sums of money on it—in fact they spared no money—they hired two expert men to go into the factory and try to make good butter out of this sort of cream. They had the most improved machinery and the best of everything, but they have come to the conclusion that the only way to produce good butter is to get A No. 1 raw material. They have also found out that it is not best for the producer to deliver them the sort of cream he delivers from the hand separator under their former directions, but if they had told the farmer this in the first place they would have been afraid it would have put a check on their selling separators, as, indeed, it would have done. So they just went ahead at this practice and thought they could contrive some way by which they could use this kind of milk and cream. Now, this was the plan that most hand separator agents worked on.

We should like to have them join us in making good butter. We want them to take an interest in dairying. We have a lot of traveling men in Iowa who sell the creameries supplies, and these sort of men have done more for the State than we give them any credit for. They try to impress upon the people that they should be more careful with their raw material and thereby make better butter. They are working on that principle. We want the hand separator people and the salesmen to be with us, and help us to raise the standard. When they go to a farmer's house and tell him it is not necessary to wash their machines carefully you can either know that the man is not familiar with his business or he is just telling them that little story in order to sell his separator. It seems to me that if a lady should come here to Indianapolis to buy dishes and she should go into a store to look at them and the clerk should tell her that these dishes did not need washing at all, I am quite sure she would walk out of the store. She would not want such dishes in the first place, and she would know that it was not true in the second place. It is the same with hand separators if not worse. It is really worse, because the separators become inoculated with germs and the flavor becomes so bad that when it is made into butter it is very noticeable. I do not like to antagonize these men, but I should like them to come in with us and do these things right. We do not want to go to the farmers in a community and dictate to them and say you must do this

and that, and use this separator or this system in handling your milk. If you desire to put in hand separators it is all right with us. That is your privilege, but we do ask, in the name of the business, and in the name of everything else, that you will do it right if you start in.

It has been admitted that milk as it comes from the cow is practically pure. If that is the case, if it is not inoculated with any unfavorable bacteria, and it is immediately run through the separator, it depends upon the separator in what condition that cream comes out. If that milk is run through a clean separator the cream will come out in a good condition—just as good a condition as it was in when it went in—therefore it is very important that the separator be perfectly clean. The milk that is just taken from the cow should not have a bad odor. The milking should be done in a cleanly manner, run through a clean separator, and the cream should be clean. You take that cream and put it in one of the Cooley cans and then put it in cold water and stir it, and in a very short time it will be cooled down. Five minutes will do it. In that length of time you can cool it down to the temperature of the water almost. It will cool 50 degrees. After you get it down to 50 degrees you have it where the bacteria in it can not work very rapidly, and you should then cover it up tightly. Do not leave it exposed to the air, then you are certain that nothing can get into it. When you separate next time run the cream into another can; do not run it into the old can. Go through the same process with it. If you do not care to put it down to 50, 55 is pretty good. When you get both down to the same temperature you can pour the cream from one can into the other can, and stir it up. In this way you will have sweet cream for some time unless there are some bacteria in it and the temperature rises and they get in their work. If you do this you will have A No. 1 cream to send to your creamery. It is absolutely imperative that everything that is used about milk be scrupulously clean. I was called to a creamery over in Iowa because they were having trouble with their butter on account of it smelling and tasting musty—it had a musty flavor. I was sent for to see what the trouble was. We went carefully through the creamery to see where the musty flavor came from. I followed the milk from the time it was received from the farmers until it was cream. I hunted and hunted and could not find what caused the musty flavor and I began to feel as if I had run against a tough proposition. I stayed all night that night, and the next morning I went over to the creamery with the first man there, and saw him put the separator together. It was clean and bright. There was evidently nothing the matter with the separator, and I saw that the vats were clean. I went through the milk and critically examined it, and it was all right. I saw that everything was all right, as I thought, and the creamery had no more than commenced to run until he brought some of the cream to me and told me that it was just the same as ever. I smelled it, and, sure enough, it was musty. I think you could have knocked me over with a

feather at that time, for I was so astonished. I thought it could hardly be possible. I followed the cream down the spout into the vat and it was perfectly clean as far as I could see. I went to the separator and caught the cream and it was decidedly musty. I said: "It is not clean." I was immediately assured that it was, and that it was steamed out every day. I had not run up against such a proposition before in my life and I was determined to find the cause. I told him I thought the vat was at fault. The directors were notified to come in. They had been notified the day before and were all there. We stopped the separator and took the pump apart, and when we did this we found the musty flavor. I turned the steam hose on for five minutes and we could not kill the smell. We took it apart and I took it into the fire room and threw it in the firebox. They thought it would burst the pump, and I was a little uneasy myself about it, for I thought it would crack it, but I knew that it was the only way to destroy the bacteria. We got through with this, put it together again, started it to running and the cream that came out was as nice as you have ever seen. They made butter from it that scored 98. You must keep things perfectly clean to avoid this trouble with hand separator cream. I thank you.

(Applause.)

Mr. Cheesmen: Did you learn how often they took that pump apart and cleaned it thoroughly?

Mr. Keiffer: I do not think they took it apart very often, but they put in the hose and cleaned it thoroughly in that way.

Mr. Schlosser: May I ask Mr. Keiffer if he knows how the creamery company grades the milk, as No. 1, 2, and 3?

Mr. Keiffer: I do not know.

Mr. Schlosser: I have noticed in the paper that they have established a grading system, and I was just wondering about this.

Mr. Newby: I have seen some cream at the station on the way to their factory that was simply rotten. It was not fit for making butter at all. At that time they were taking it and paying the regular price for it just the same. I can make good butter out of hand separator cream, but the cream must be in good shape. If you have good cream you will not have any trouble making good butter.

Mr. Wilson: I should like to ask Mr. Keiffer if they are adopting any law for grading the cream in Iowa. I should think that was more applicable to our conditions here and in Illinois.

Mr. Keiffer: I was in one creamery just before I came down here and I have a circular in my pocket now in regard to it. The conditions there are similar to those, and he gave me to understand that they were trying to get on the grading basis. They did not dare turn the milk down for fear of losing their patrons—for fear they would go somewhere else—but he told me that just as soon as they could they were going to establish this plan. It is not effective as yet.

Mr. Wilson: Have you ever heard of its being adopted only in isolated cases?

Mr. Keiffer: The only kick I have heard them make is in regard to hand separator and gravity cream. They will not pay as much for that.

Mr. Wilson: I was told by parties that they had adopted this plan in some places—I think it was a creamery in the northern part of the State—and I understand they graded from 85 to 90 and from 90 to 95.

Mr. Fisher: I should like to ask what the co-operative creameries are doing.

Mr. Keiffer: Iowa is the home of the co-operative creameries. There is where it originated, and they have been running successfully there. These people are simply taking out the running expenses of the creamery. Everything else is turned back to the farmer, except the expense of running it.

Mr. Holloway: I would like to ask in regard to the centralizing plant. There is one that comes into my territory. Most of the milk is separated by the hand separators. But they come into my territory and say to my patrons: "You sell us your cream, and it don't make any difference when you send it to us. Send it to us when the can is full." Now, you know that it usually takes about 10 days for a can to get full. I had been insisting on getting their cream at least twice a week. I understand they are trying to work in a number of places in the same way. This makes it hard on me. I should like to know what to do under such circumstances.

Mr. Schlosser: It looks to me as if the small creamery plant would have a certain advantage over these plants, inasmuch as you can come in personal touch with your patrons, while they can not do it. I think the best thing you can do under the circumstances is to remain friends with your patrons, and let those that will leave you, but you can possibly keep the best ones. I think the hand separator problem is coming here in Indiana just the same as in other places in the western States. We will have to admit that advertising has been done to sell separators, and

in some cases we will have to admit that it has been quite unscrupulous on the part of the manufacturers. You will find that they tell the farmer a great many things which they can not live up to when the time comes. We should do something to teach these fellows to sell their goods on their own merits and not in the underhanded methods which they are employing to sell their separators.

Mr. Slater: Opposition is the best thing we can have. When we commence to have opposition we will commence having a creamery State. That is what makes it.

President Johnson: It is now time to eat, so I think we had better adjourn to meet at 1:15 this afternoon. Please be on time.

(The meeting stood adjourned.)

FRIDAY AFTERNOON.

President Johnson: Some of our committees are now ready to report, so we will hear from them first thing. Is the Auditing Committee ready to report?

Secretary Van Norman: The chairman of the Auditing Committee is not here, but he has handed in his report, which I will read:

"We have checked over the Secretary's report and find it correct.

"W. W. FISK,

"A. H. COMPTON."

Mr. Calvin: I move that the report of the committee be accepted.

Mr. Hursh: I second the motion.

(Motion carried.)

President Johnson: Is the Committee on Resolutions ready to report? (They were not quite ready.)

Then we will have the report of the Nominating Committee.

G. W. Drischel: The report of the Nominating Committee is as follows:

For President—D. B. Johnson, of Mooresville.

For Vice-President—I. B. Calvin, of Kewanna.

For Secretary-Treasurer—H. E. Van Norman, of Lafayette.

For Executive Committee—The Officers and A. W. Antrim, of Indianapolis; J. W. Knox, of Lebanon.

Mr. Schlosser: I move that the report of the committee be accepted.

Mr. Swan: I second the motion.

(The motion was voted upon and carried.)

President Johnson: I had not expected to act as your President another year, but you have nominated me, and have elected me, and, as the balance of the officers are the same as previously, and they have not kicked out, I guess I can not.

I want to say that when we took hold of affairs last year we were determined that we would have a successful meeting in the central part of the State. We put forth quite a good deal of effort to do this, and you know the results. We would appreciate it if this were repeated again next year. We are not able to do this ourselves. We are perfectly willing to do all we can, but we must have your assistance. We have had a fairly good meeting this year, but let's resolve now that our next year's meeting shall be better.

Is there any other preliminary work before we start on the program?

Prof. Van Norman: It is customary at this time to receive an invitation from the towns who desire the next meeting, and these invitations are referred to the Executive Committee, with power to act. If there is a place that wants it they are entitled to present their requests for consideration.

Mr. Hursh: I have been thinking this matter over seriously for some time, and I consulted with Mr. Ellison, at Ft. Wayne, and he rather cast a damper over me, for he told me that the poorest convention that was ever held was held at Ft. Wayne, and that he went \$50 in the hole. But I think conditions have changed in Allen county and that the next one would be more successful. We have a beautiful room in which to hold the convention in the court house, and I have talked to several people and they say that they would be anxious and happy to have the convention there, and I am here to tell you that Allen County extends to you a cordial invitation if it is your pleasure to bring the convention to Ft. Wayne.

President Johnson: If there are any other invitations the Executive Committee is ready to hear them. If there are no more invitations we will pass on to the program. The first thing which we wish to take up is:

INDIANA CREAMERY CONDITIONS

H. N. SLATER, PURDUE UNIVERSITY.

Mr. President, Ladies and Gentlemen—I do not want you to take this to heart too much, and at the same time I want you to appreciate the situation. I went out this fall for the purpose of finding out what influence conditions will have, and I shall give them to you just as I believe them, and let it hit where it will.

We have many good cows in the State of Indiana, more, in fact, than are in many other creamery districts. We have small farms in Indiana, and in most instances there are three or four cows on the farm. The farmer consumes at least one-half of the milk produced by those cows, and that leaves one or two cows to produce butter for market. In a case like that it means that a farmer can hardly afford to harness up and drive to a creamery in order to deliver that small amount of milk, and for that reason I advocate pretty strongly for the State of Indiana the hand separators. Milk is scarce and hard to get together. There is a lack of interest and education among the farmers in a dairy way. The people that attend these conventions are not the ones which we would like to talk to along these lines. There are hundreds of thousands of them that were never in a dairy convention, and we can not get them in, and they are the ones which we would like to talk to. We can not reach them. Buttermakers and managers of creameries do not do their part. I know buttermakers in this State that are not acquainted with their patrons—they would not know them if they should meet them face to face in the road. As I told you this morning the best thing for these conditions is opposition. I know, because I have been in opposition. If this man here who owns a creamery does not do the right thing the patrons will not go to him, but will go to the man a mile farther on, and he knows he has got to do the right thing. He has got to pay as much for their butter fat as the others are paying. This is true when the creameries are close together, but when they are 25 or 30 miles apart it is different. Then they are not acquainted with one another. These conventions are good things, because if they attend the conventions they get acquainted with each other, and then they get to meeting in their own counties. In Martina and Miami counties, Minnesota, they meet at least once or twice a month, and 20 or 30 buttermakers get together and discuss subjects that are of interest to them. They get the assistance of each other and also of Prof. Heacker. It is not enough to call the people together only once a year. If they can not do better than that it is better than not at all, but it is not enough. There is money in cream and milk. There are lots of

people that would rather have dairy butter than creamery butter. I must say that the butter which we have had at this convention today is very good. The dairy butter especially is something to be proud of. In many cases it is more profitable to make poor butter in the State of Indiana than it is to make good. Doesn't that seem queer? Nevertheless it is a fact. We have got to send out eight or ten miles in order to collect the milk—milk enough to run a creamery. We get lots of milk when the cows are all fresh, but when they begin to dry up half the cans will hold the milk, and so we commence sending after it once every other day. You see it costs so much for each trip and if we can cut down the number of trips to half, then we have cut that expense in two. In this way you may be able to make some money out of it. I know two co-operative creameries that never expect to make any money during the rushed season, but when the cows begin to give less milk they make their money. I know lots of creameries that do not think of paying over \$10 a week for a buttermaker—they are perfectly contented with a \$10 man to operate their creamery. How can a man on a salary like that afford to go to school and educate himself. It seems to me he could go out in the field and follow the plow and make more money than he could following the creamery business at that price.

President Johnson: Allow me to interrupt a moment. In looking over some of the committees I have found that some of the people have gone home and I do not believe there is much, if any, work done at this time, so I shall appoint a new committee, and I wish that they would go to work immediately so that we may have their report before the close of the meeting. I will appoint Messrs. Knox, Calvin, Drischel and Woods on the Resolutions Committee.

Mr. Slater: We have as much brains in Indiana as they have in Iowa and Wisconsin, and all we need is to educate ourselves. We have the same things to contend with here in Indiana now that we had in southern Minnesota 10 or 12 years ago. The farmers could not understand how their tests varied from day to day, and from month to month. They could not understand how it would be five points higher or five points lower. When it was higher you never heard of it, but when it was lower, look out. Some of the folks using the hand separators will put in their milk before getting up speed, and will try to separate night and morning's milk together, and then expect the machine to do good work in that way. They will have it full one time and the next time have it half full. In rinsing the separator some use skimmed milk and others water. Another thing, when a sample test is taken the cream should be thoroughly stirred. This is the part for the creamery man to attend to. It is hard to mix up and get an accurate test of it when it is three or four days old. I have found that the individual creameries in the different States are kept in a much

better condition than the co-operative ones, except in one instance. Individual creameries in this State are a credit to our State, as they are to most places. They have good buildings, good machinery, and better buttermakers than the co-operative ones. I do not know whether they are making more money or what is the reason. They pay about the same for the butter fat as the co-operative creameries. The individual man usually keeps things in better shape than the co-operative creamery. The individual keeps his buildings and machinery in good repair, while the co-operative do not allow anything for the wear and tear on their machinery. I am not kicking the co-operative creameries, but I think they should be run by successful buttermakers. I know of one that is different from the majority. In this one the buttermaker was cheerful with the patrons. They all liked their buttermaker, and, indeed, the patrons did not think they could get along without him, and all he had to do was to make a kick and they would raise his wages. He is now getting \$95 a month. Do you suppose it is because he is good looking? Not a bit of it. He is getting it because he is worth it. If they didn't think he was worth it you may be sure he would not be getting it. I have worked for \$35 a month myself in a creamery. Butter contests have done a great deal for me. I shall not say very much because I am the man that the boys send their butter to be scored, but I am sure it would help them a great deal. Any one wanting to have their butter scored can send it in at any time. We will criticise it and send back their score and tell them what we think is the matter with it. They should not send it with the expectation that it will come back scoring 97 and be disappointed if it does not.

Be sure to keep the outside of your creamery looking nice. Don't have old chairs and stools and rubbish of all sorts setting around. I think it is so much nicer to have a nice flower garden in front of the creamery, and when a farmer comes in who is mad because the cow kicked him that morning and has decided he will take his spite out on you, he will see the flowers and get in a good humor without having said an abusive word.

Our markets are good. We have excellent places to ship our goods. When the butter has to be shipped the commission man gets a whack at it, and the railroad company gets a whack at it, and so you see what it has to sell for.

Speaking of circulars and bulletins. I do not believe in them myself. It takes a long time to get up these bulletins and thousands and thousands of dollars to get them out, and when they are out they are not appreciated. What is the matter? What we want to do is to get next to the farmer and that is the place for the buttermaker to go to work—get out among the patrons. Call meetings at the school houses in order to get the people interested and to get acquainted with them. Even if a man does not buy any more cows he will take an interest in what he has got, and will commence to study up the feeding of the cows. They must learn this, that they must feed in order to get milk. The co-operative butter-

makers should write a few articles for the county papers. They do not have to be long ones, you might just say a few words. You will get so that you can say more, and pretty soon you will be a nuisance to the paper. I never saw a man that was a good buttermaker but what made a success of his business. You want to get some kind of a dairy paper into each patron's home, and into his hands. If he will not take one himself send one to him and make him take it. Spend \$25 in that way. It will do you good.

(Applause.)

Mr. Bosey: I have been in 27 different States and I have yet to find a place better fitted for the dairy business, than Indiana. People talk about the great dairy possibilities in northern Wisconsin, for instance. These possibilities are nothing in comparison to the possibilities which present themselves in Indiana. The climatic conditions are better; the soil is better; we can grow alfalfa—the greatest dairy food we have. When I came to Indiana three years ago full of enthusiasm put into me by Prof. Henry, like Mr. Slater's suggestion, I commenced to write articles for the newspaper. I found it very difficult to get the farmers to take the agricultural papers. I remember one instance in Brown County when I went to a man and wanted him to take the Indiana Farmer for one year at 25 cents. He explained to me that he did not have very much time to read, and I explained to him that he would have all he could read there, and said that every little helps, and he said to me: "That is the reason why I want to keep my quarter in my pocket." I kept on writing and pretty soon I wrote on the dairy possibilities of Indiana, of central Indiana, I should say. Not nearly all that I wrote was published, for they did not have room for it. What the people need here is some sort of an awakening. Indiana has blessed its citizens bountifully in the past. I have been able to make a living without doing much. I was talking this question over with a man from Benton County and he said he would not give the snap of his fingers for a farmer's institute or agricultural journals. He insisted that it took practical experience to make a farmer. He had good soil up there, and I'll venture to say he could not tell the difference—the points of difference—in a dairy cow and a common beef cow. When it comes to scientific farming, which we must get into in the future, he would lag behind. It is easy to make a living when you do not have to do anything with the soil to make it produce. But soils that have been good producers in the past are becoming tired out, and in the years to come when the dairy cow is found to be the cheapest of any form of live stock, she will stay after all other kinds of live stock have passed out of existence. The people of Indiana should be awakened to see these things. There are possibilities lying right at their door if they will *only* take them in. There is the old saying that necessity is the

mother of invention, and whenever the mortgage becomes due on the Indiana farms and the people can not hang onto their farms any longer, then the dairy cow will be thought of and will become the leading industry of the State. We have here a class of young men that consider a fast horse, a rubber tired top buggy, and a pretty girl living, but they never spend an honest thought about how to make a living. When you go to hire a young man to work on the farm, his first question is, "Can I have my horse fed?" When Saturday night comes you do not see any more of the young man until Monday morning. These conditions must be changed. It is a pity to see many of our farmer's sons that have been brought up in good homes, when they become of marriageable ages, they are willing to marry and live in a dirty room in a back woods, in a rented house, and rent 10 or 20 or 30 acres of corn ground. Do you know a remedy for it? There can be but one. Whenever the time comes that people can not make a living off of the grain farm they will start in to keeping the dairy cow. In Brown County, the banner county of the State, we have many such farms, and these farms can be kept profitably. There is a wrong impression among the farmers in regard to this. I know of people in Iowa who attend their farm and milk 16 and 20 cows morning and night. It doesn't take long to milk that many cows. People could do these things if they would only think they could.

I thank you very much for your kind attention, and should like to hear from someone else on this subject.

(Applause.)

President Johnson: We will now have to leave this subject and take up the next one, "Oleomargarine." This subject was to be given by Mr. Shilling, but he is not present I understand, so Prof. Van Norman will give his ideas.

Prof. Van Norman: I am very sorry Mr. Shilling could not be here and present for himself the following thoughts. The law which forbids oleomargarine to be sold as butter has been worth many dollars to the dairymen the last year. I shall now read Mr. Shilling's letter:

OLEOMARGARINE.

S. B. SHILLING, PRESIDENT NATIONAL DAIRY UNION, CHICAGO.

Gentlemen—It hardly seems necessary for me to again enter into anything of an extended account of our organization. Its aims and objects are already well known to you, and the simple fact that our work has shrunk the output of oleomargarine the first two years of the existence of the law we secured, from 125,000,000 to less than 50,000,000 pounds is of itself sufficient evidence that we should be entitled to some consideration at your hands.

One year ago when I had the pleasure of standing before you we were in considerable doubt as to whether our law was going to stand the test as to its constitutionality, but I am glad to be able to inform you that doubt no longer remains; every case that was then pending before the Supreme Court of the United States has since been decided in our favor, and we have every assurance that our law protecting our industry as dairymen is proof against any onslaught that may be made as to its constitutionality.

But in the past year a new danger has arisen. The oleomargarine manufacturers, recognizing the impossibility of being able to overthrow or nullify the law, have formed an organization for the purpose of securing a modification of that law, in that they are asking for a reduction of the present ten cent tax to four cents, and also making such other provisions and changes as would practically nullify the present law. This has been met with prompt action by the National Dairy Union and the machinery of the organization put in motion to combat any move looking to any change in our present law. Our success will depend entirely upon the support we receive from the dairymen at large. We believe we make no mistake or can not be accused of egotism when we say the present healthy condition of the butter market is due to our organization, and we feel that this should entitle us to consideration at the hands of every dairyman and creamery man in the country.

Our annual meeting is soon to be held, on February 3, at Mason City, Iowa, and it is the wish of the officers that we have a large meeting, and also it is our wish that we know before undertaking another year's work whether we are going to have the support necessary to take up this new struggle we feel is coming and carry it on successfully. Pass a strong resolution commending our work, then take the individual action necessary before our annual meeting so we may know whether we can depend upon you in the future.

Indiana in comparison to the amount of her dairy industry has been quite liberal with us, and we feel safe in saying that if you will stand back of us in the future the way you have in the past it will be a long time before they can succeed in any way changing our present law.

Mr. Miller: I have a few words to say in regard to these meetings. I do not think we have them often enough. Why can't we appoint chairmen in the different districts here and there, and meet once a month and report to headquarters just what we are doing, and then come in touch with the people all over the United States in that way.

President Johnson: That is a subject on which we can all act as a committee of one.

Mr. Schlosser: I listened to Mr. Shilling's paper, and I think he was right when he said that the dairymen of the country were not fully awake on this oleomargarine question. We have an inkling that in Chicago they are selling it right along—that is the present law is being violated. It might be hard to catch the parties, but that they are doing it seems evident. I was told just the day before yesterday by one of our salesmen that he had been told by the representatives of a butterine manufacturing concern that there were a few men in Chicago that have a big room in which they manufacture oleomargarine—they are carrying it on just the same as they used to do. It seems to me they are taking desperate chances. This man says that he knows where this is taking place. He was not exposing anyone, but of course they do that as much in secret as possible. They will continue this until they are caught, and then we hope they will pay the penalty. I have heard of a man who was sent to prison six months for violating this law.

I have noticed that one of the Chicago Congressmen is thinking of springing a bill for the reduction of the color tax to four cents. Now, we need to watch these movements closely. This is a ticklish proposition. For this reason we should support the National Dairy Union.

President Johnson: I think we have devoted all of the time we can spare to this subject. We will now take up

LESSONS FROM THE WORK AMONG THE DAIRYMEN OF
NORTHERN ILLINOIS.

A. J. GLOVER, ASSOCIATE EDITOR, HOARD'S DAIRYMAN.

Mr. President, Ladies and Gentlemen—I scarcely feel that I am an up-to-date young man according to the description I have heard this afternoon, for I never owned a rubber-tired top buggy, or enjoyed the company of a beautiful girl. While my wife is not very good looking, yet, she is the best I have.

The Secretary wants me to tell you something about the lessons that I drew from my work in Illinois. I told you yesterday that I had conducted the field work for about three years, and in that time had observed a number of things of interest. We might study the needs of the dairy farmer. Now what is the object of this work? What was the object of the Illinois appropriation of \$10,000 annually for the dairy field work? Was it an investment that she would never get interest upon? Was it to give men good positions? I was a Minnesota boy and hadn't the faintest idea of coming to Illinois until they approached me to take this position in the field. Certainly, then, it was not with a view to giving her boys employment, but rather of getting value received for the amount of money invested.

The object of this work was to make the farmers see themselves as other people saw them. Many experiment stations had found out that certain cows were kept with profit, some with intermediate loss, and others with material loss. In order to have the farmers see these things, in order to bring them face to face with the facts as they existed upon the farm, I was sent into the field to show them the way. The results of that work have been of considerable interest to me, and it has been of a great deal of value. I hope, I sincerely hope, that I may tell you something that will be of interest to you. The increase in the dairy work has been very marked. If I could increase every dairy like the one I tested I should be pleased. You will remember that I told you yesterday that from 145 cows the second year they received more milk and more butter fat than they did from the 160 the first year. There were 15 less to milk and feed, and there was an increase of over 1,000 pounds of butter fat. In my work I have observed how many poor cows are kept. Cows are kept that have no particular excuse for being. It is a serious mistake for a dairy farmer to start out in that way. Some farmers will buy a certain breed of cattle and get along nicely for a time and then change from one breed to another. What I mean is this. A man will start out with a beautiful herd of Jerseys. He keeps those for

a time until he happens to see a Shorthorn that attracts him and he begins to mix the breeds. He goes from one to another until his breed is all mixed up. He then tries the dual purpose cows, which have made a phenomenal record, and in a short time he hasn't as good a class of cattle as the day he began. Breeding dairy cattle is a very simple thing, and yet it is very complicated, too. If you start out with a breed of cattle you should select cattle to your taste, the same as you select your wife. A man selects his wife according to his own taste and not according to the taste of someone else, and if he has been fortunate he finds himself quite comfortably situated in middle life, although those of us who are married know that women are not perfect, although we may think so before we married them. It will be just the same when you go to select certain breeds of cattle. You must go according to your individual likings. Each breed has its merits, and you must find out which one you want before you decide which you will have. If you start out with one and stick to it, after a life of toil you can look back with a great degree of happiness as you look back with happiness over the life you have lead with your partner.

I might say that right around Elgin there is produced more milk than in any other State in the Union. There are high class dairy barns, well ventilated, and last year there was very, very little attention paid to selecting the sire, and yet he was one-half of the herd. They seem to think anything will do, and they go out and select their animal. What does it mean to procure a sire that will produce cows that will produce over 300 pounds, and a sire that will produce cows that only produce 150 pounds. The difference is inestimable. It can not be measured in dollars and cents. That is what the dairymen are doing in that State. They select very inferior sires. I suppose it is because they can get them cheaper. You will remember that it takes about 150 pounds to pay for a cow's keep one year, and when you get a cow that produces 151 pounds you have one pound of profit, and if you have a cow that produces 152 pounds you have two pounds of profit. Therefore, the cow that produces 152 pounds is twice as good as the cow that produces 151 pounds. Isn't that right? I will leave this question with you. How much better is the cow that produces 300 pounds than the one that produces 150 pounds of butter?

The production of milk and the development of dairy cattle is very much neglected in certain portions of Illinois. In the northwestern portion cows are turned out in the cornfield to feed on the dry material, which has very little nutrition in it, and it takes more energy than it is worth to go after it. It is like feeding wood. I think you can remember my story from yesterday. I think the barns in which the cows are kept should be well ventilated, and well lighted, and kept clean. I think a great deal should be said in regard to ventilation and light, because we are face to face with a serious problem and that is tuberculosis. I think that is the greatest enemy we have today. Ventilation and light are

two of the greatest preventives. The barn should also be kept warm and comfortable. If you want to produce good butter you must take good care of your cows.

I must agree with what the Governor said yesterday in regard to two blades of grass growing where one had been growing. I think I must take exception to what Mr. Wilson said. He seemed to think that we did not want to produce any more, but wanted to produce a better quality. We want to produce more, because there is a great demand for butter, good butter. When butter is 35 cents a pound it is beyond the reach of common people. You want to make two pounds where one was before. We are using a pound of butter a day in my home. Can a man that is getting \$1.50 or \$2.00 a day afford to pay 30 cents a day for butter. I am afraid he can scarcely afford to do it. Of course we must have quality. We must not forget that. I suppose that now one pound of butter fat costs 20 cents to produce it. Wouldn't it be possible to make this for seven and a half cents a pound? If this were true, couldn't you afford to sell it for 15 cents. If this were true we would consume more, and it would all work together for good to all people. How will we manage to make it cheaper? We will have to use cheaper foods. We will have to get better cows and learn the comparative value of feeding. I find in my field work that the farmers do not study the comparative value of feeds. For instance in the illustration I gave you yesterday, that man could have sold his ton of corn and bought one ton of something else that would have contained more protein. Alfalfa is good in a case like this. We must look for better cows and cheaper feed.

I should encourage the use of silos where they are taken care of correctly. It takes about 12 tons of corn silage to feed a cow 12 months. It is a cheap feed. On this kind of feed a cow would require about seven or eight pounds of hay, and a few pounds of grain to produce 350 or 400 pounds of butter. It certainly does make a splendid feed when it is put up right. You should be careful about the premises, and not let it lay around in the alley or on the barn floor. If you do not see that there is none left lying around the result will be the infection of your milk.

We must be careful in raising our crops about the fertility of the soil, this must be taken into consideration. We know that in many of the older agricultural regions they are using dollars and dollars worth of commercial fertilizers. We scarcely realize the immense amount of money that is being paid out for fertilizers in this country. We must think seriously of these things. For instance, when you sell one hundred bushels of corn from your farm you sell about \$18 worth of fertilizer, that is, if you had to go into the open market and buy the fertilizer that you take from the soil in 100 bushels of corn, it would cost you about \$18. When you sell 500 pounds of butter fat which is equal to 100 bushels of corn you sell 15 cents worth of fertilizer from the soil, and in 10,000 pounds of milk only \$8 worth of fertilizer.

So you see it is much better for the land when you sell the butter. It really doesn't cost you anything, for you are building up the soil; furthermore; when you compare the dairy fields of central Illinois, and those of the great corn belt in the northern part you will see that there is a great difference in the land in favor of the dairy fields. They have begun to realize that the dairy section can raise more corn than they do; indeed this is a question worth thinking about. No matter how rich your soil may be, you can ruin it, just the same, as no matter how rich a man may be if he continually takes from his bank account and does not replenish it, some day he will reach the end. It is the same with the soil.

In Minnesota, the State in which I was born, the State has done a great deal for itself through the dairy interests. We are not content with just one dairy meeting, so we go out and hold county meetings. We meet in one county one time, and the next time go to another county and hold our meetings. We send circulars to the farmers and ask them to come in and meet with us, and get them interested in the dairy cow, and in this way Minnesota has made great strides from a State with a very few creameries 10 years ago to one that now shows over 700. These meetings cause a good deal of thought and interest. There are 18 townships in Steel County and nine creameries, and every creamery receives a goodly supply of milk. In that little county last year they sold more butter than was ever sold in the history of Steel County before. They support all of these creameries and make a good living. There was one time in that State when the farmers had a time to keep their farms, they had them mortgaged to such an extent. My father and I moved out of that country and went to North Dakota, but we returned in about two years. We came back and started in the co-operative creamery. Up to that time it had been hard for the farmers to borrow money at the bank, but after that when they went into the bank with milk on their boots and trousers, and asked them to loan them \$100, the president would say "Most assuredly." And if they came in dressed up nicely, without the milk on their boots they were likely to be refused, for they couldn't borrow \$5. The only trouble is that the farmers are not face to face with the facts as they exist. They must understand that it is necessary that they have nitrogen in their soil. If they will go to Purdue University they will tell them all about these things. The reason so many people are failures is because they do not understand their work. I may be a little previous, but it seems to me that agriculture should be taught in our common schools. When I was in school they never thought of such a thing, and I never saw a text book on the subject until I was about 17 years of age. When the farmer boys are in school, and expect to be farmers, I think it is no more than right that this should be taught.

Plants must have nitrogen, and children should be taught how they can get it. When you go into the open market and buy it you have to

pay for it at the rate of fifteen cents a pound. Nitrogen is the most important element of plant food. Shouldn't the boys in the common schools be taught that nodules grow on the roots of clover, and on alfalfa, and that they obtain the supply of nitrogen from the air. Wouldn't it be better to use these in their arithmetic problems than to say A, B and C loaned money to D for so much. Something concrete would be so much better than something abstract. Some folks think that agriculture was only made for the common people. The trouble with all of us is that we do not see the beauties that lie within our reach—they are lying around us. We do not see them because we, as boys and girls, were not taught about them. Think of the beautiful lessons we can get out of the habits of the different kinds of birds. Do you know that insect life would become so thick that we could not live if it were not for these little creatures. Some people say there is no happiness on the farm. Burke Cochran has well said, "Some people think a man can be happy if he is only famous, but a man is not famous until after he is dead." Other people seek happiness through work, and I have found that the greatest happiness comes in the performance of some form of effective labor. We hear of the eight-hour plan—eight hours in the forenoon and eight hours in the afternoon, but I have found that the man and woman who are the most successful are the man or woman who has worked 16 hours a day. The children should be taught some of these things. Teach them the elements of agriculture in our common schools; teach children about the care of the milk and the bacteria that are souring milk, interest them in buttermaking, and in this way we can make them a great deal happier. In the city of Chicago not long ago President Harper said to the graduating class: "You are about to leave this school and those of you who are to gain success will find already too many in the field; and those of you who will be successful for the first few years will find the wolf will be the only company at your door." You only have to look about you to see the number of teachers who are looking for positions—they are making applications for positions. The school boards are besieged night and day by teachers who want positions. If the dean of an agricultural college should say those things to a graduating class, "the wolf will be the only companion at the door," I would as soon expect to find myself sitting on some distant star and reading in the morning paper that everything was in an everlasting smashup.

In the words of Joseph Custer, superintendent of a high school and farmer, "I will close my address." I thank you.

President Johnson: We will have to cut the discussion of that paper out if we get through with the program. The next thing is

THE MILK SHIPPING BUSINESS IN NORTHERN INDIANA.

SAM B. WOODS, CROWN POINT.

Seventy years ago northwestern Indiana was a wilderness. "The rank thistle nodded in the wind and the wild fox dug his hole unscared." The deer roamed the woods and prairies and was only hunted by the red men for their flesh for food and their skins for clothing. This country was the happy hunting ground of the Pottawattomies, who held the territory between the Kankakee River and Lake Michigan. Up to 1832 there was no white man in all this region, except fur traders, perchance some hunters and trappers and some soldiers at Fort Dearborn, now Chicago. In 1834 to 1836 white people began to move in and divide the wilderness with the Pottawattomies, and from that time on northwestern Indiana has kept pace with the march of civilization. It is peculiarly situated. Its northwestern corner is within 12 miles of the court house of Chicago, and occupies the space south of the head of Lake Michigan—across its territory every railroad must pass which, from the east or southeast, enters the great city. There are twelve trunk lines which pass over Lake County, besides several belt lines, which gives a great portion of the farmers of northwestern Indiana good facilities for shipping milk to Chicago and the outlying towns of South Chicago, Hammond, East Chicago, Indiana Harbor, Whiting, and others. My first recollection of the dairy business in this section was in milking outdoors in zero weather, when the cows' teats would freeze, the milk would freeze on the pail, and my fingers so cold it was liable to spoil a good disposition, and with all the suffering a very little milk. From that time to this the dairy interests of northwestern Indiana have gradually improved, until, at the present time, we feel that by comparison we can make as good a showing as any section of Indiana or any territory which ships milk to Chicago.

Wheeler Station, situated between Valparaiso and Hobart, on the Pittsburgh & Fort Wayne Railroad, I think has the honor of being the pioneer district in the milk shipping business of northwestern Indiana. The railroad company would place a car on the side track at that point in the evening, and the farmers would fill it ready to return the next morning.

About 20 years ago we found a man on Archer avenue, Chicago, who would buy our milk, he furnishing the cans and paying \$1.30 per can of eight gallons, ticket costing 15 cents. At that time the Grand Trunk had no milk train, but by seeing the officials we succeeded in getting them to carry it on their express train in the evening. It made good

money for us, and we thought if we could have a regular equipped milk train for the convenience of the business it would be a good thing individually and for the company. The railway company agreed if enough would sign a petition agreeing to ship so it would pay them, they would put an accommodation train on. Someone went up and down the section tributary to the Grand Trunk soliciting, and several farmers agreed to ship the grand total of 16 cans. With very small hopes we reported to the officials of the railroad, and told them farmers were rather slow in taking hold of a new enterprise, but we believed when they saw their neighbors putting milk into Chicago they would join in, and the business would rapidly increase if they would put on a train.

They seemed to think so too, and it was put on, and it has made its regular daily trips from that time to this. The Grand Trunk is now and has been for some time carrying daily about 450 cans. The Erie Railway delivers in Chicago 555 cans, besides unloading a large amount at Hammond, Hegeswick and other suburban towns. The Pittsburgh & Fort Wayne 350 cans daily to Chicago, and as much more to South Chicago and other outlying towns. The Monon handles 125 cans; Baltimore & Ohio, 200 cans to Chicago, besides supplying Indiana Harbor and Whiting and other towns; the Panhandle, 100 cans daily, besides dropping some before they get to the city proper. Total number of cans shipped to Chicago from northwestern Indiana, 1,313. That is what goes down town—about one-tenth of the total amount that enters Chicago. These figures are given me by Mr. Eugene Smith, of the firm of Richmond-Smith Company, who are the milk agency of the city. He says, from the best figures it is possible to gather, there is a total of about 14,000 eight-gallon cans of milk entering Chicago daily.

Up to about 20 years ago, the Elgin, Dundee and other sections north and west of Chicago furnished most of the milk for the city. Prices and the demand were good, and the shippers made money. With the growth of the city the growth of the milk shipping territory to the south and east more than kept pace with it, until there was more milk than there was a demand for, and shippers once in the market would sell their milk at most any price to most anybody until the price got down below the cost of producing it. Besides, a great many selling to irresponsible dealers lost milk cans and the whole business was in bad shape. In 1895 and 1896 we received on the average for the year 58 cents per can after the price of the ticket was deducted. The producers virtually had nothing to say as to price. The dealers in Chicago were made up of all the nationalities on earth, and as to their moral and business reputation there was good, bad and indifferent, and at times it seemed as if the bad were in the majority.

Farmers were so anxious to ship their milk to Chicago that they would send it to any old thing that had any kind of an old horse and wagon if he would only say he would take it, and the bargain was he would pay

what the rest of the dealers did at the end of the month. So at the end of the month a lot of these Bohemians, Pollocks, Dutch and Irish would meet around at the corner saloon, take a pretzel, swie glass beer, and decide what us farmers should have for our milk that they had already sold at a fixed price to the consumers. It went from bad to worse, until it was a shame for a decent farmer to ship milk to Chicago. The shippers became tired of this condition of things and met in Chicago in the month of March, 1897, and organized what is called "The Milk Shippers' Union," of which the following is the constitution:

CONSTITUTION OF THE MILK SHIPPERS' UNION.

Preamble.—We, the milk shippers tributary to Chicago, believing it to be for our mutual interests, do hereby organize the Milk Shippers' Union, and agree to be bound by the following constitution:

Objects.—This association is formed for the purpose of promoting the prosperity of the producers of milk tributary to Chicago, for mutual protection against unreliable dealers, for securing uniform action in all matters pertaining to the general good of the trade; for correcting the abuses which hamper it, and for encouraging and building up a common union for the general good of its membership.

Name.—This organization shall be called the Milk Shippers' Union.

Membership.—Any person or firm engaged in producing milk or shipping it to market may become a member of this association upon signing an application for membership in which said applicant accepts and agrees to abide by the provisions of the constitution governing this association. Such application must be accompanied by the membership fee for one year.

Plan.—The organization shall consist of local unions, composed of members at a shipping station or platform, and a central union composed of one delegate from each local union, and the board of directors, and also division unions composed of the members on a railroad division for the purpose of electing and controlling a director.

Board of Directors.—A board of directors composed of one member from each division of railroad bringing milk to Chicago, elected by the members of each of said divisions at or before the annual meeting every year with the regular officers of the central union, shall constitute the board of directors of the union.

Officers of the Central Union.—The regular officers of the central union shall be a president, vice-president, secretary and treasurer, who shall be farmers or milk producers, and shall be elected annually by ballot at the regular annual meeting, and hold their offices for the term of one year, or until their successors are elected and qualified.

Duties of the Board of Directors.—The board of directors shall have general charge and direction of the affairs of the union, and shall direct

the secretary and treasurer in the discharge of their duties. It shall have full control of the finances of the union and shall determine upon all points affecting its policy. The board of directors may require any officer to give a bond.

Meeting of Directors.—The board of directors shall meet on the first Monday of April and the first Monday of October, or on call of the president and secretary or the concurrent demand of any five directors.

Quorum.—A quorum to do business shall consist of nine directors.

Auditing Committee.—An auditing committee of not more than three shall be chosen by the board of directors, who shall examine the accounts of the secretary and treasurer and report thereon at the annual meeting or at such other time as may be deemed expedient.

Annual Meeting.—The annual meeting of the Milk Shippers' Union shall be held in the city of Chicago on the last Monday in February, each year, for the election of officers and the transaction of such other business as may properly come before the meeting. A special meeting may be called by the president and secretary or by any five members of the board of directors, at such time as they may determine, in the city of Chicago. Notice of all meetings of the central union shall be given by the secretary or by the five members of the board of directors in writing to the officers of each local organization at least seven days prior to said meeting, stating the object for which the meeting is called.

Annual Dues.—The dues shall be fixed by the board of directors, not exceeding two (\$2.00) dollars a year, for which every member shall be liable until he gives notice in writing of his intention to withdraw.

Expenses.—The total expenses of the union in any year shall never exceed the revenue during that year. No money shall be expended for any purpose unless voted by the directors, at a legal meeting, and all appropriations shall be subject to the above condition.

Vacancies.—Whenever a vacancy occurs in the board of directors or officers of the central union it may be filled by the board of directors at any legal meeting or by the qualified voters at any legal meeting of the central union.

Amendments.—This constitution may be amended at the annual meeting of the central union or at any special meeting, provided notice of the proposed amendment shall have been given in the call for the meeting.

The directors meet semiannually—spring and fall—to suggest a price at which milk shall be sold for the coming six months. It is a very easy thing to suggest a price, but the next thing is to maintain it. A great many shippers never joined the union and would sell a little under the union price and place their milk to good advantage. And a great many who did join the union could not place their milk readily at the established price and would sell under the price suggested by the union, and the members that were true to their principle could not place their milk and

had to make the best use of it they could at a great loss. But for all the discouragements we have had there were a few true blue that stood by their guns and have worked wonders in the interests of the milk shippers about Chicago. Some four years ago a gentleman by the name of Richmond, who is largely interested in the Elgin district, associated himself with Eugene Smith and organized what is known as the "Milk Agency," whereby the farmer signs an agreement with the agency to pay them one cent per can for selling the milk to a good responsible party, looking after the cans and collecting the money and sending it to the farmer. The agency is to sell the milk at a price suggested by the milk shippers' union.

This relieves the shipper of the trouble and anxiety of selling his milk, looking up lost cans (which is a big item), and going in to collect his money at the end of every month, which is necessary to do in most cases, as the majority of the dealers have not enough business in them to deposit their money in a bank and make out a check. I am now speaking of the small dealers as a class. There are as good business men in Chicago who handle and distribute milk as there are in any city or in any business—Bordens, Kee & Chaple, Ira J. Mix, Wanzer & Son, and others, that do a big business on business principles. The agency's idea was to reduce the whole business to business principles—but they are having a hard time of it. With the lack of business principles with the farmers and also with the dealers they are like being between the two millstones we read about. But we as milk shippers are gaining ground. We have an organization—a head to work from. The health department of the city works with us to better the conditions of the milk supply. Instead of an average of 58 cents per can net in 1895 and 1896, we received in 1903 an average net price of 87½ cents for 3.6 per cent. milk. The city standard is 3 per cent, but the standard established by the shippers and dealers is 3.6 per cent, and that is now what a shipper must furnish if he wants a permanent demand for his milk. Those who have an extra good and rich article can demand an extra price.

Mr. Gurler, of Illinois, makes what is called a certified milk. Everything connected with the making is the best and the cleanest, and I understand he gets 8 cents per quart for his product wholesale. Since the dawn of the new era of dairying in northwestern Indiana the improvements of the farms, buildings, lands and cows is something wonderful. Large red barns and fine farmhouses have sprung up as if by magic. Miles of drain tile have been laid, silos built, and, with the manure from the cows applied to the land, has made the land very productive. The shippers soon found when they began to measure their milk every night and morning in a milk can there was a great difference in cows, and the more progressive soon concluded it was a hard job to buy good cows, so they bought good bulls (mostly Holstein) and raised their heifer calves from their best cows, and with proper care it was no uncommon thing to

double the capacity of their cows. There is one thing that too many are slow to learn, and something they must learn to be good dairymen, and that is feeding the cows a balanced ration. So many will feed what they grow on the farm whether or not it is the proper ration for the cow. As a general thing too much corn is fed and not enough of the protein foods. If we would grow more clover, cowpeas, Canada peas, alfalfa and not so much corn, we could balance up. But we do not, so we must buy it, and buy it in the article where we can get the most protein for a dollar. In our section we have been using Buffalo gluten feed for 15 years, and it is rapidly gaining in favor. We can get nothing that will make the cows give the quantity and quality as Buffalo gluten feed or gluten meal. Wheat bran and middlings are good, but they cost too much.

I believe the dairymen of northwestern Indiana are "on to their job" as much or more so than any community of dairymen in Indiana.

(Applause.)

President Johnson: We will close shortly, so please do not leave the room until we have finished. We will stop now to announce the prize winners and award their prizes.

Secretary Van Norman: I have the pleasure of stating that the first prize was awarded to Mr. Martin, of New Carlisle, on his creamery butter. On behalf of the Indiana State Dairy Association I have the pleasure of presenting to you, Mr. Martin, this evidence of the Association's appreciation of your skill as a buttermaker, and extend to you the wishes of the Association and my personal wishes that it may be the kind of butter which you put on the market at all times.

Mr. Martin: Ladies and Gentlemen—I can not express the gratitude that is in my heart toward the dairy school, because that was where I learned to make good butter. As a buttermaker I appreciate the work, and the education that those two men, Prof. Van Norman and Prof. Slater, have given me. I assure you that there are plenty of boys in the State that could do just as well as I am doing if they would only go to work. It takes study to do it. Of course I appreciate getting the silver cup, but I should like to see some one else get it. If some one else can make a better score than I can it is my wish that they get the cup. If the boys will get up and work and study they will be able to do something. I have done it and I am quite sure they could if they would. It was at this dairy school that I got my knowledge and information. I can not express my thoughts, but I assure you I appreciate what you have done for me. I thank you.

Secretary Van Norman: I would like to say in response to Mr. Martin's words of appreciation that it is gratifying to have started some folks

out—those who are willing to put in honest work at study—and we appreciate having boys like Mr. Martin in our school. The question of individuality comes in pretty strong in a case of this kind. It is gratifying to see a boy apply himself like this boy did when he was a student. When you see some one taking the cups like this boy has you may be pretty sure that somehow, somewhere, there must be something in the student as well as in the instruction.

To Mr. G. W. Drischel, for Boyd & Drischel, makers of the highest scoring cheese, on behalf of the State Dairy Association I wish to present to Mr. Drischel, in recognition of your skill as a cheesemaker, this cup, and I hesitate to wish you continued success, as you have had first place so long. I am sure your generosity would recommend that if you have a worthy competitor he should receive a cup instead of yourself once in a while.

Mr. Drischel: I will frankly confess that I would like some one else to get this once in a while. We have been getting it in our firm since they have been giving cups, which commenced in 1897. It is an honor, and we appreciate it, but it is getting monotonous, and as I have said previously, we would rather some one else would win it once in a while. I think the reason that we get the premium on our cheese is because we get good milk. We have been very firm with our patrons, and insist on having good, sweet milk. If it is not up to the standard of sweetness or cleanliness, we reject it. We depend entirely on the tests we make. We have taken 27 different premiums on our cheese in the past seven years. I think this shows that the dairymen should take a little bit of pride or interest in the cleanliness of the milk. It will show the results in butter the same as it does in cheese. We thank you for the honors that have been conferred upon us, but we hope that at the next association some one else will get it.

Secretary Van Norman: Mrs. Rippey is not present, so we can not present this cup to her. It is hardly necessary, but I should like to say a few words. It is a striking fact that these persons who have been winning the first prizes time and time again have done it with different judges. This year we had a judge from Iowa, and I wish to say that in every contest the entries have been numbered and there has been absolutely no suggestion as to whose exhibit it was, and when we have judges from Iowa, from Chicago, and from different places score the butter and continue to give the first prizes to these same people, it seems to me that this is evidence that they have the quality. I think it is impossible for a man to go into a contest and win the first prize without doing his work better every day than he did before. I should like to encourage that class who are not first prize winners. I think it takes a good deal

of courage for a man to enter a contest when his records have shown before that it is almost useless for him to expect first prize. It takes courage to go in when one's chances are slim. I hope these people will keep on trying and finally win out.

President Johnson: The next thing on the program is—

SUPPLYING BUTTER TO PRIVATE CUSTOMERS.

MRS. M. B. SCHENCK, LEBANON.

Retailing to private customers is the surest way of obtaining a fancy price for butter through the entire year. For one beginning this work, the first thing to be considered is the quality of the butter to be supplied. Uniformity is one of the essentials. In order to have this there must be system in the work of making. Principles must be understood, and rules be observed, not inflexible, ironclad rules that are never changed to suit conditions, but such as, used with judgment, will bring about the desired result. Method counts for a great deal, provided one has the correct method. I have known persons who observed religiously something like the following: The cream is skimmed by hand and placed in a stone jar until enough is secured for a churning; this is placed on the reservoir of the cook stove to ripen. When ready to be churned, a member of the family suggests a visit to a neighbor. "Yes, the churning can wait, of course." Late returning leaves this to be done the next morning, when the casein is in large solid pieces in the bottom of the jar. The temperature is taken by dipping the finger in the cream and applying to the face of the operator. If found to be too cold, boiling water is added, which cooks the casein above mentioned. The result, a spongy mottled mass. This method has little to recommend it.

To make a good grade of butter, the milk should be kept as nearly as possible free from foreign substance; care and cleanliness in milking, separating immediately, and cooling to 50 degrees will usually give a good cream, unless bad feed or period of lactation have an influence. All utensils should be thoroughly cleaned with brush: first, with lukewarm water, as this frees them from the casein and albumen of the milk; then with water containing an alkaline, and last with boiling water until heated thoroughly.

When enough cream is secured for a churning the can containing cream should be placed in a large can of water at the desired temperature.

This is a great help in maintaining the correct temperature, as water is not subject to such rapid changes as is air, and should it change, is easily remedied by adding warm or cold water. Frequent stirring of the cream causes it to ripen evenly, and gives a smooth body, free from lumps. Knowing just when the cream has enough acid to give correct flavor to the butter and make churning reasonably easy is one of the fine points in buttermaking. The acid test is a great help in determining this. Over-ripe cream may make rancid butter, while that from underripe cream tends to lack flavor and keeping qualities. The temperature for churning should be as low as can be used and secure the butter in a reasonable time. Churning should be stopped while granules are small to give thorough washing and even distribution of salt. Wash water should be near the same temperature as butter milk to avoid streaks in butter from unequal salting.

Work the butter by pressure as much as possible, as rubbing or rolling out into thin sheets tends to injure texture. A rectangular print wrapped in parchment paper is a desirable form for retail trade, as it is convenient for putting up and has a neat appearance, which usually counts in securing customers.

It may seem unnecessary to say anything about the correctness of weight of each print, for dairy people are of course all honest, but we have known of some making mistakes to the amount of four ounces to the print. Sixteen ounces are not an over-abundance when selling by the pound.

Regularity of delivery is always an important part of the work. We find that customers will come to the wagon for their butter, which saves much time, especially if one has to do their own driving and hitching. Customers who remain at home during the year are preferable to those who pay a fancy price during the winter and are away during the summer months, when butter is more plentiful. Have found it the best plan to sell for cash; then there is no collecting or hunting for persons who find it convenient to move frequently.

When speaking of our work we often hear the question, "Isn't it a life of drudgery, this making and peddling butter?" If one chooses to consider work drudgery it most surely is, for there is plenty of hard work necessary to success. While to the one who is willing to put thought and earnest application to the work, thinking of the improvement to be made, of the mastery of principles and applying of same, there is interesting and profitable employment. When we began the dairy business we studied every bulletin we could lay our hands on, and got everything that we thought would give us information along these lines. We studied on the question of what kind of a cow we should choose for a butter cow, and we made some very good selections, but I think there was more luck about it than anything else. We bought five cows, and we now have a herd of nine, and we have been keeping a record of them for eight months.

In the eight months they have made 250 pounds of butter each. We did not hope to reach the 300 score, but you can readily see that we are going to more than reach it. We were very fortunate in our selection of cattle, even more so than some folks we know who are much better versed on things of this kind than we, therefore I say it must have been good luck.

(Applause.)

Chairman Johnson: I think that the resolution committee is now ready to report. If so, we will have that report at this time by Mr. Knox.

REPORT OF RESOLUTION COMMITTEE.

Resolved, that this Association extend its sincere thanks to Prof. Plumb, Mr. Weiffer, of the Iowa Dairy Commission, and Mr. Glover, of Hoard's Dairyman, for their valuable services. We also appreciate the help of our local speakers.

Resolved, that we appreciate and in this manner express our thanks to Governor Hanly for his kindly greeting and encouraging words.

Whereas, we have a national law which is proving effective in compelling oleomargarine to be sold for what it is, and

Whereas, we are informed that the oleomargarine interests are striving to have national legislation enacted that will modify and possibly nullify the purpose of the present law, therefore be it

Resolved, that this Association in annual convention assembled call upon its representatives in Congress to use their best efforts to maintain the present law in spirit and in letter.

Whereas, the success of the present oleomargarine laws depends largely on their efficient administration, therefore be it

Resolved, that we commend the work of the National Department of Agriculture, Dairy Division, and the Internal Revenue Service for the thoroughness of its work.

Whereas, it is brought to the attention of this Association that death has removed from his responsible position of active work in behalf of the dairy interests of the country our chief of the Dairy Division, Major Alvord, therefore be it

Resolved, by the Indiana State Dairy Association, in annual convention assembled, that it place on record this brief expression of our appreciation of the valued and lasting services performed in behalf of the dairy interests by Major Alvord.

Whereas, recognizing the need of aggressive measures for the advancement of Indiana agriculture, the Indiana Live Stock Breeders' Association,

the State Dairy Association, and the Corn Growers' Association, recently appointed a joint committee to present their request to the Legislature for an appropriation to the State Agricultural Experiment Station at Lafayette, and

Whereas, in order to make this request as effective as possible the committee must have the intelligent co-operation of the farmers of the State, it therefore submits the following statement for your information:

The committee finds that practically the only fund available for experimental work in Indiana is the annual appropriation by the United States Government and that Indiana has never appropriated one cent for the work of the Experiment Station, as was contemplated when the government first made its appropriation. Twenty-six States are appropriating to their several experiment stations amounts varying from a few thousand dollars to as high as \$42,000 in Minnesota, and \$87,000 in New York, while the States adjoining Indiana on the east and west appropriated last year amounts as follows: Illinois, \$85,000; and Ohio, \$61,000.

The work accomplished by the Indiana Experiment Station fully justifies the expenditure by the State of \$25,000 asked for by the several associations, through their joint committee, especially as this appropriation will be in the nature of an investment which will bring large returns to the State.

It is proposed that this appropriation shall be applied in the following specific lines of work: For live stock, including investigation and study of successful combinations of feeding stuffs, methods and conditions of meat production, and preparation of animals for market in Indiana; for co-operative and other experiments with corn and other crops, soils and fertilizers, including breeding of improved varieties of crops and their adaptation to different soils of the State, and the fertilizer needs of soils in different sections of the State; and for investigation and study of cows kept, feeds used and returns secured from the milch cows on Indiana farms and losses in skim milk; also for advancing the work of the station now in progress, therefore be it

Resolved, that this Association in annual convention assembled urge its members to second the work of its committee in every possible way. Recognizing the valuable services of Secretary Van Norman.

Resolved, that we extend to him our thanks and appreciation of his work.

Resolved, That we thank the supply men for their contributions and kindly interest taken in the convention.

Resolved, that the thanks of this Association are hereby extended to the judges of the Indiana Supreme Court for the use of their room, and to the State Board of Agriculture for the use of their room, No. 12.

Resolved, that the thanks of the Association are due the Indianapolis Cold Storage Company for their services in hauling and handling the butter and cheese for exhibition.

Resolved, that the Association express its appreciation of the work of those Indianapolis men who have contributed of their time and money to the success of this convention.

J. M. KNOX,
I. B. CALVIN,
G. W. DRISCHEL,
S. B. WOODS.

Mr. Newson: I move you that the report of the committee be accepted.

Mr. Dungan: I second the motion, and also move that the committee be discharged.

Mr. Woollen: I do not know whether it is an opportune time to offer what I am going to offer at this time or not, but if it is not you can say so. I may not be in accordance with the constitution and by-laws. I have been secretary of several associations for a number of years, and I know what a great amount of labor it takes to do this work, and I should like to make an amendment to that resolution offered in regard to Secretary Van Norman, that his salary be increased to \$100 a year.

Mr. Duncan: I should like to second that motion. I was just thinking of that myself. I think we should attend to this at once.

Mr. Knox: I think it would be the proper thing to make that a separate resolution.

Secretary Van Norman: Being an interested party permit me to say that I am doing gladly what I am doing. As far as the salary part is concerned I do not think the Association can afford at the present status of the game to give any more than they are giving. I might say that I am working everyone I can, and am doing as little of the work as I can myself, and if the Association will approve the bills I send in for clerical work it will be satisfactory to me. Further, the salary of the Secretary is in the hands of the Executive Committee, and you would have to instruct the Executive Committee in regard to this. It seems with the present indications in the Legislature we will have harder sliding next year than we are having this year.

Mr. Woollen: I would like to make the motion if it is the sense of the Executive Committee and of the organization, that the Secretary's salary be increased to \$100.

(The motion was seconded, voted upon and carried.)

President Johnson: Now we are ready to vote on the adoption of the resolutions.

They were voted upon and carried.

Mr. Calvin: As a member of the Committee on Resolutions there is one resolution which, if it is made effective will require a motion, and I desire that we do something to make this effective. If we do not do this we might just as well have left that resolution out, and that is the resolution in regard to oleomargarine. I would like to move you that the Secretary of our Association forward to our United States Congressmen, and United States Senators, and members of the lower house, a copy of this resolution, with the sense of the Association.

(Motion carried.)

President Johnson: Has this committee any further report to make? Are the Legislative Committee in the room?

Secretary Van Norman: I think they are still at work.

President Johnson: We will then go on with the program.

RETAILING MILK.

F. W. HEMENWAY, ZIONSVILLE.

I had a paper prepared on this subject but I hardly think I shall read it. I seriously objected to having anything to say on the subject when the matter was first mentioned to me, but the Secretary called me a goose, and told me that the discussion was the best part anyhow, so I surrendered. If you should go to him and ask him he would probably give you a different story, but these are the facts.

I should like to tell you of an interview I had with a farmer a few days ago. To make it more explicit it was as I came down here today. He told me that he had just sold his farm of eighty acres near a town of 1,600 inhabitants, and was looking for a new location in order to get into the retail milk business. He thought his farm was not large enough. I hardly agree with him.

I have been in this business for a number of years. Our business all depends upon the law of supply and demand. We started our business a while ago in one tin pail taken by my little boy on his way to school every morning, and after a while it became necessary to purchase another tin

pail, and in a short time still more. I should like to give you a word of warning right here while we are on this subject. You will have to watch the average tin pail that you get at the hardware stores for they do not give good measure, and you do not want to subject yourself to criticism and embarrassment on this account. We have graduated from the tin pail to the cleaner and more convenient bottle.

The problem that we come in contact with most is the problem of the town cow. There are only about 1,000 inhabitants in our town, and yet the other day we were counting it up, and we found that there were about 40 cows in that town. Of course some of these are devoted exclusively to the manufacture of butter. They are so distributed that most of the people in the village depend on the town cow for their supply of milk. Where does our chance come in? Right here. We have a good grade of Jersey cows, and some thoroughbreds, and I find that the milk and cream is good; in fact our patrons tell us it is the best milk they have ever had. The town cows will go dry. We try to keep enough cows to supply our trade and a little more. When the town cow goes dry their patrons will telephone over to us to bring them milk. Now, right here comes in a little heart to heart talk—a business talk—with them. We ask them if they are going to want milk of us permanently, or if they are simply going to make a convenience of us and go back to their former man as soon as he has a fresh cow, and only patronize us while they are taking a rest. If this is true we will not take care of them. If they will stay with us it is worth our while to let them have milk.

There is another class of business which we meet. This is the cream trade. We keep a surplus of milk that we can run through our hand separator. We have a large Sunday cream supply. The cream brings more than the milk, and so we are glad to sell it. We keep two kinds of cream—fresh cream and cream that is about 24 hours old, that is in good condition to whip, and we find that this is very much in demand among the housewives. We are accommodating to the extent of putting a boy on a bicycle and sending him to the other end of town with a single pint of milk to our regular customers. We have managed to build up a good trade there in that little town, and we now hope for better things.

I thought this afternoon that we were rather out of the race, and hardly up to date, because we can not talk bacteria and microbes and cultures. We have a great many things to contend with in the retail milk business. We do not work on a farm because neither myself nor my boys are large, and we could not handle the heavy work on the farm very well, but we can milk, and even the youngest can drive a wagon and handle milk bottles, and I have two or three that are good buttermakers, but I have figured this matter out carefully, and I can see more income from my cows in selling my milk at five cents a quart than I can in selling butter at 25 cents.

We have good Jersey cows, as I told you in the beginning. Of course there are drawbacks, for instance, if I want to increase my herd. I can

not sell my milk and feed the calves, too; so what am I going to do, for of course I would want to save my heifers. How can you raise calves and sell milk? Now comes in the question of rations to take the place of the milk. We must figure this out. Of course we are near a small town, but the demand for milk is reasonably steady. We market our goods at a good price without a very great deal of expenditure of labor. We do it much easier than we could farm, for farming is sometimes done by main strength and awkwardness, and we can not fill the strength part of it, but as I have said, we can milk. You will be surprised to learn that in a town the size of ours it is hard to get good butter even at a good price. Most of the better class of people buy their butter in Indianapolis, but even considering the good price that is paid for butter we can make more off of selling our milk. We used to make butter too, but our business has grown so rapidly that we can not take care of it, so we have had to drop the butter end of it.

This is a good business and I think more people ought to engage in it.

Mr. Wilson: Has your demand for cream grown more rapidly than your demand for milk?

Mr. Hemenway: No, sir; about the same. Here is one feature of the cream trade. There are people who buy their milk of the town cow and telephone over to our place for cream. This is another fine thing—to have a telephone in your house. We have gotten many orders on account of people being able to call us and tell us to leave them milk or cream.

Mr. ———: Will you furnish cream to the town cow customers?

Mr. Hemenway: Yes, sir.

Mr. Miller: I should think you would not let them have cream unless they took milk of you, and if they wanted your cream bad enough they would come to you for both.

Mr. Hemenway: I try to keep cream on hands all the time. I keep sweet cream right fresh from the separator, and keep some about 24 hours old for whipping purposes, because the sweet cream will not whip, and I find a great demand for it. The reason I supply folks with cream who are not customers of mine is that the town cows are not good cream cows. Our milk even is fine from our Jersey cows. I have been told often by my patrons that when they have company and they see the milk bottles they will say, "Why you are going to have cream for dinner, lots of cream," when in fact it is only the milk bottle. That is the kind of milk we sell. That is the way we put the town cow out of business, by furnishing better milk than they can furnish. I could make almost

as good a quality as some of them sell with a pump and pulverized chalk.

President Johnson: We will have to leave this subject and pass on to the next, which is

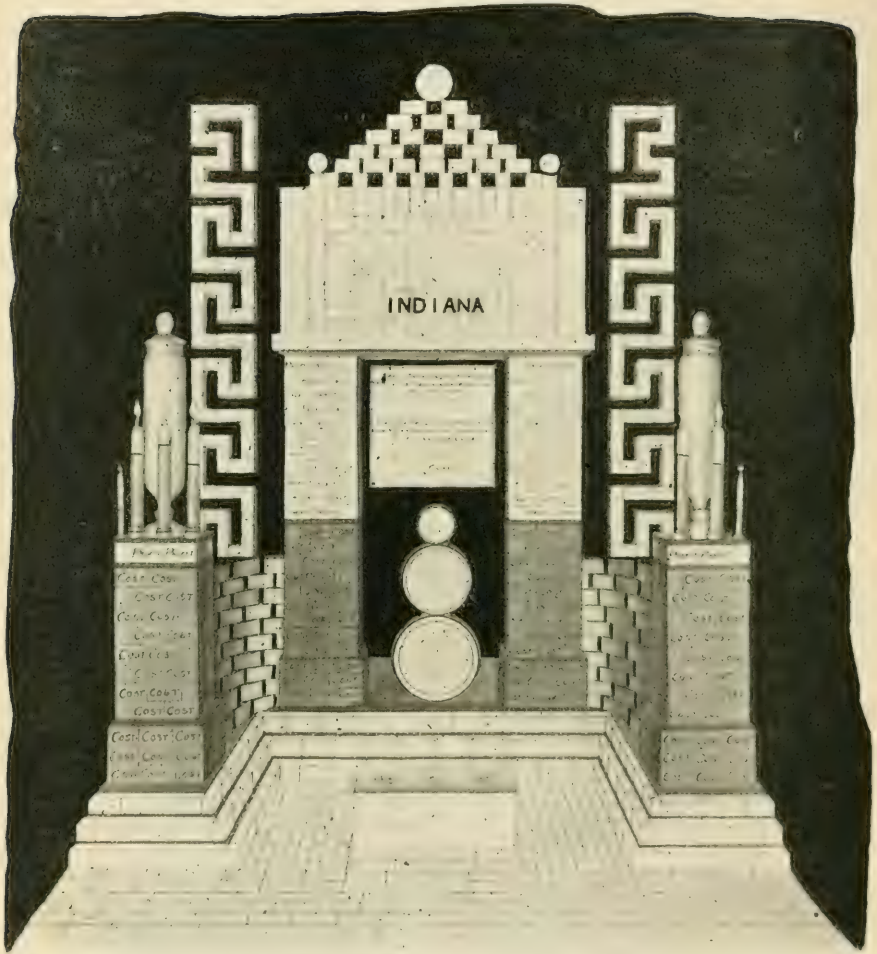
INDIANA DAIRY INTERESTS AT THE WORLD'S FAIR.

H. E. VAN NORMAN, SUPERINTENDENT, LAFAYETTE.

Indiana's Dairy exhibit at the Louisiana Purchase Exposition occupied one section in the immense refrigerator provided for the exhibition of butter. The section was 12 feet high, having an eight-foot floor space and eight feet square of triple glass front, and in common with others was cooled by ammonia expansion coils. The display consisted of butter in commercial packages, tubs, prints and in form suitable for table service, the whole arranged in an attractive design, presenting a pleasing contrast to the sculptured figures from the other States. The chief feature was a structure consisting of four columns, two short ones in the foreground representing by the number of prints required to make them the number of pounds of butter annually produced by the average cow of Indiana, as reported in the last census. In the center background two tall columns connected with the shorter ones by a balustrade of unwrapped prints. These tall columns showed the number of pounds of butter produced in one year by a good cow.

The superstructure surmounting the tall columns consisted of prints bearing wrappers from these creameries in the State which market their butter in parchment wrappers, arranged in a pleasing design around the scroll, "Indiana."

The prints in the lower portion of each column bore the mark in large type, "Cost," while the upper part bore the legend, "Profit," thus showing what proportion of the total year's production in each case was required to pay for the feed consumed. In the case of the average cow the short columns showed 167 pounds as the annual production of the average Indiana cow, of which 158 pounds were required to pay for the feed consumed, leaving only nine pounds profit. In the case of the tall columns there were shown 303 pounds as the annual production, which is secured by many successful dairymen, of which 164 pounds must be sold at market price to pay for the grain, roughage and pasture consumed during the year, leaving a profit of 130 pounds, thus presenting to the



Drawing of Indiana's Butter Exhibit in the Refrigerator, Louisiana Purchase Exposition, St. Louis. Blocks were one-pound prints.

Designed by H. E. Van Norman.

eye in a graphic manner the above difference in the yield and profit between the good and common cow, of which many of the latter are even kept at an actual loss.

Between the tall columns stood a pyramid of varying sized tubs, so placed as to show the exposed surface of the butter. These columns and the pyramid stood on a raised platform approached by three steps. The unoccupied floor space and approach to the platform was paved with half-pound prints, the edges of the steps covered with purple in pleasing contrast with the yellow of the floor design. In the center of the foreground was a low table on which was displayed butter in various forms, suitable for table service, especially individual serving. The wall forming the background was covered with purple velveteen, and the space set aside for Indiana's portion outlined with a border design composed of half-pound prints arranged in a geometrical pattern.

The short columns on either hand in the foreground were surmounted by tall jars; on the left showing two gallons of whole milk and in smaller jars the food constituents in milk, as follows: $10\frac{1}{2}$ ounces of butter fat, 14 ounces of milk sugar, $8\frac{1}{2}$ ounces of casein and albumen, and 2 ounces of ash or mineral, while on the right was two gallons of skim milk and with this the constituents, each in a separate jar, $14\frac{1}{2}$ ounces of milk sugar, $9\frac{1}{2}$ ounces of casein and 2 ounces of ash. Cards explained that by the addition of two cents' worth of flax seed meal or one cent's worth of corn meal to the other constituents of skim milk, thus substituting vegetable fat for $12\frac{1}{2}$ cents' worth of butter fat in the whole milk we had a feeding value equal to that of the whole milk, and have effected a saving of 10 cents per day or \$3 per month on the cost of raising a calf.

The exhibit as a whole was arranged with the thought of presenting three important facts in such a manner as to be easily apparent to the casual observer, as follows:

First. The great difference in yield by the average cows and the good cows.

Second. The small difference in the amount required to pay for the feed of both classes of cows.

Third. The great difference in the profits over and above the cost of feed with the two classes.

Fourth. How butter in marketable forms and packages lend themselves to an attractive display and varied shapes for serving on the table.

An occasional question was asked why Indiana did not compete in the sculptured designs with the various elaborate displays from some of the other States. The only answer is that the funds available for all the expenses incident to Indiana's exhibit were less than the amount paid the sculptors by some of the other States, to say nothing of the refrigerator, butter required, labor, traveling expenses, etc.

The New Carlisle Creamery Co., New Carlisle; Schlosser Bros., Oak Grove Creamery, Plymouth; and Purdue University Creamery, Lafayette, contributed butter for the general design. The butter wrappers used in the structure surmounting the tall columns were secured from the creameries at Avilla, Lima, Carlisle, Kewanna, New Carlisle, Plymouth, Orland, Mondamin Meadow Co., Ft. Wayne, and Purdue University Creamery.

In the monthly scoring contest, where diplomas and medals were awarded on the basis of the average of four entries, namely in June, July, September and October, respectively, the following is the list of the Indiana entries:

CREAMERY BUTTER.

<i>Buttermaker.</i>	<i>Creamery at</i>	<i>June.</i>	<i>July.</i>	<i>September.</i>	<i>October.</i>	<i>Average.</i>
J. M. Holderman..	Plymouth..	91	91½	94½	95½	93½
Frank Lennick. . .	Hanna	92	91	93	92	92
E. L. Martin	New Castle	94	94½	95½	94	94½
J. F. Penrod	Kewanna . .	93	93	89	92	91¾
J. H. Staubli	Orland	92	94	88	92	91½

DAIRY BUTTER.

<i>Group A.</i>		<i>June.</i>	<i>July.</i>	<i>September.</i>	<i>October.</i>	<i>Average.</i>
Mrs. M. J. Rippey.	Syracuse . .	94	94½	95	90	93.37
<i>Group B.</i>		<i>June.</i>	<i>July.</i>	<i>September.</i>	<i>October.</i>	<i>Average.</i>
Brenson Doud	Chili	86	90	90	94	90
Mrs. Chas. Lamont	Mooresville	93½	91	85	87½	89½

The following made one or more entries, but for one reason or another were prevented from taking part in all four:

Creamery Butter—G. Herman, Osgood; J. B. Pessel, Butler; W. E. Osborn, Modoc; C. E. Holderman, Bremen; E. K. Carpenter, Fremont.

Dairy Butter—Edith Parsons, Clayton; A. V. Hightshue, Clemont; Hemenway Bros., Zionsville.

CHEESE.

Indiana is not conspicuous in the number of its cheese factories, though one of them has made a very favorable record on the quality of its product. In the large refrigerator case provided for the cheese exhibit Boyd & Drischel, of Cambridge City, and G. P. Swan, of New Washington, were each represented with Young America and full cream Cheddar cheese. They also took part in the four scorings, as follows:

		<i>June.</i>	<i>July.</i>	<i>September.</i>	<i>October.</i>	<i>Average.</i>
Boyd & Drischel.	Cambridge City..	93	93	86	91	90¾
G. P. Swan	New Washington.	93	64	81	68	76½

PHOTOGRAPHS.

On the small floor space beside, and adjoining the butter refrigerator space there was arranged a table and display case containing photographs from a number of prominent dairies and herds in the State. More were received than there was space for in this case, and these were placed in Indiana's general agricultural exhibit nearby. The following were represented by one or more photographs of either animals or equipment:

J. V. Shugart, Marion; S. B. Woods, Crownpoint; D. F. Maish, Frankfort; M. J. Rippey, Syracuse; A. P. Walker, Rushville; Schlosser Bros., Plymouth; Amboy Creamery, Amboy; Chrisney Creamery, Chrisney; Fountain City Creamery, Fountain City.

The most striking lesson to my mind brought out by the work I did in behalf of Indiana's dairy exhibit and the observations which I was able to make, is that Indiana has a few creameries and cheese factories that are turning out products that are acceptable in the most critical market, that there is no inherent reason why we can not compete with the best in these markets. The only reason that the number is small is that the number of makers who have had thorough training in their work is small. The States which carried off the honors of high scores not only had many entries, but uniformly high scores. Inquiry reveals the fact that in Minnesota every buttermaker exhibiting not only had received instruction in the dairy school of that State, but was aided by the most efficient system of traveling instruction conducted by their State Dairy Commissioner. The most skillful men in the State, to the number of half a dozen or more, give all their time to traveling from one creamery to another, helping the buttermaker to improve his method and product; in extreme cases when necessary, bringing legal action to enforce their demand for cleanliness both in the creamery and on the part of the patron supplying milk. It was the general opinion of the superintendents of the dairy exhibits of the various States that to this advance system of instruction and education for her buttermakers, together with their united and hearty co-operation with the educational forces of the other States, was due the conspicuous success which these buttermakers scored. I think it was three out of four times that Minnesota scored two to four out of six highest scoring tubs.

A few words as to the manner in which this work was done may be interesting to the buttermakers who are not privileged to attend the fair. The butter from most of the States was assembled at some central point and shipped from there by refrigerator service. Indiana shipped to Chicago, joining with the exhibits from Wisconsin and Illinois, to whose superintendents, Mr. Loomis, of Wisconsin, and Mr. Hunt, of Illinois, our exhibitors are indebted for helpful co-operation. They were delivered at the refrigerator in the Agricultural building by the transportation

authorities, and the superintendents checked up their respective exhibits to know that all packages were present. The superintendent of the department, Mr. Sudendorf, then took charge of the tubs, numbering them in accordance with his record, and removing all tags and marks of identification. They were piled ready for the judges, who were that veteran judge, Mr. Orin Douglas, of Boston; John Middlestadt, of Chicago; B. D. White, formerly of Minnesota, at that time from Canajoharie, N. Y. In one end of the refrigerator case was a light room where the temperature was a little more moderate than in the storage room. Here the judges worked. The tubs were opened, one at a time, each judge drawing a trier full, examining the same and expressing his opinion. When any difference of opinion was apparent on first expression the differences were discussed and studied until the three agreed on the score which the package was entitled to. A clerk recorded the results of their agreement, the package and score card having only the number as a means of identification. When a tub was found that scored above 95 it was set aside for further consideration, this pile being called the "Shake Down." Working in another part of the room was the expert critic, P. H. Keiffer, of Iowa. After the judges were through with a tub of butter the critic took it, examined it together with the entry blank marked with the buttermaker's number only and dictated to his clerk suggestions to the buttermaker for overcoming the faults apparent. It was both gratifying and amazing to the speaker, who had the privilege of seeing the first two scorings, numbering some 450 tubs, and a number of tubs in the later ones scored by the judges and criticised by the critic, to note the remarkable agreement as a rule in their estimate of what the score should be. Time after time the critic would say to his clerk, "What did the judges give this one, 91½?" or "94½?" and rarely was he one half point off, time and again hitting it exactly. Again he would remark as he tested a sample, "That must have so and so's starter in it," and the clerk would look at the entry blank to find that the critic was correct. There was absolutely no room for partiality nor any unfairness of any kind.

After all of the tubs had been gone through the judges came to the "Shake Down." At this time all disturbing factors, interruptions and visitors were excluded, five or six tubs placed in a row were opened up and one by one, the lowest scoring of these were eliminated as fast as the score was agreed on until finally it narrowed down to four or five "toppers." If in any of the tubs there could be the least distinction made they did not receive the same score. This work required in each case from three to four days to go over some 450 tubs entered each month. Neither the judges nor the critic nor even the State superintendents, after they had checked over their butter from the transportation company were able to identify the tubs from their own State, much less that of any individual.

Mr. Knox: In recognition of the services of Prof. Plumb in the early life of this Association, I want to move you that he be made an honorary member of this Association. It seems to me that it is the proper thing to do at this time.

Mr. Woods: I second the motion.

(The motion was voted upon and carried.)

President Johnson: Is there anything further to offer this afternoon? There being nothing further, the meeting will stand adjourned.

TREASURER'S REPORT.

Lafayette, Ind., January 18, 1905.

To the Officers and Members of the Indiana State Dairy Association:

I beg leave to submit the following report as Treasurer:

RECEIPTS.

Balance on hand last report.....	\$307 77
Sale of exhibits.....	85 48
Hoard's Dairyman share in creamery, patron investigation in Marshall County	55 00
Contribution to Premium Fund last year—	
Heller & Merz	\$10 00
DeLaval Separator Co.....	15 00
Colonial Salt Co.....	15 00
Vermont Farm Machine Co.....	10 00
	50 00
Contribution to Premium Fund for 1905—	
The Sharples Separator Co.....	\$25 00
Empire Cream Separator Co.....	10 00
O. Douglas	5 00
Indiana Silo Co.....	15 00
A. H. Barber Creamery Supply Co.....	10 00
	65 00
Lists of Dairymen sold.....	20 00
State appropriation	500 00
From creameries for instruction.....	20 00
Annual membership	65 00
Total	\$1,168 25

DISBURSEMENTS.

Premiums paid	\$137 72
Speaker's expenses	50 02
Traveling expenses of officers.....	22 21
Postage on reports, programs, circulars, etc.....	38 15
Express and cartage.....	5 91
Printing programs, letter heads, paper and score cards.....	31 50
Clerical help	19 19
Telephones and telegrams.....	3 28
Services of Secretary.....	50 00
Stenographic report of convention.....	35 00
Printing Thirteenth Annual Report and separates.....	87 19
Printing Fourteenth Annual Report.....	65 17
Engraving cups	7 70
Rent of typewriter one month.....	4 00
Miscellaneous	15 50
Educational work	51 61
	<hr/>
Total	\$624 15
Total receipts	\$1,168 25
Total disbursements	624 15
	<hr/>
Cash on hand.....	\$544 10

Respectfully submitted,

H. E. VAN NORMAN, Sec.-Treas.

This is to certify that we have carefully checked over the Treasurer's report, and find it correct.

(Signed) W. W. FISK,
A. H. COMPTON.

January 20, 1905.

CREAMERY BUTTER ENTRIES AND SCORES, INDIANAPOLIS, JANUARY 19-20, 1905.

SCORED BY P. H. KEFFER, IOWA.

Silver cup to highest Indiana score, and premium distributed pro rata to all scoring 90 and over.

No.	NAME.	Postoffice.	Flavor.	Body.	Color.	Salt.	Pack- age.	Total.
1	Herbert Newby	Spiceland	39½	25	15	10	5	94½
2	E. L. Martin	1, 9, 17, 24, ..	41	25	15	10	5	96
3	E. L. Martin	7, 16, 20, ..	38	23½	15	10	5	91½
4	C. D. Shaliol	2, 8, 16, 20, 27, 31, 36, 45	39	25	15	10	5	94
5	C. E. Holderman	Bremen	37	24½	15	10	5	91½
6	C. M. McConnell	2, 8, 18, 20, ..	40	25	15	10	5	95
7	J. F. Penrod	Woodstock, Ohio	37	25	15	10	5	94½
8	C. W. Lasman	1, 9, 18, 20, ..	39½	25	15	10	5	95
9	Otto Keilsmeier	1, 8, 17, 24, ..	33	24½	15	9½	5	87
10	J. M. Holderman	Manitowoc, Wis	38	24½	15	10	5	92½
	Frank Lennick	Plymouth	38½	25	15	10	5	93½
		Hanna	38½	25	15	10	5	93½

DAIRY BUTTER.

25	Mrs. Sophie Rippey	Syracuse	39	25	15	10	5	94
27	Bronson Deud	Huntingburg	37½	25	14½	10	5	92
28	H. W. Newhouse	Chili	38	25	15	10	5	92
30	J. W. Hursht	Waverly	38	24½	15	7½	5	90
31	Mrs. Chas. Lamont	1, 13, 14, 20, ..	39½	25	19	10	5	91½
32	Mrs. M. B. Schenck	1, 5, 16, 20, ..	38½	25	15	10	5	93
33	L. W. Thomas	Lebanon	38½	24½	15	9	5	92
		Elizabethtown	34	24½	15	10	5	89½
		1, 6, 15, 20, ..	..	..	..	..	..	..
		1, 9, 15, 25, ..	..	..	..	..	..	..
		1, .., 20, ..	..	..	..	..	..	..
		1, .., 37, ..	..	..	..	..	..	..
		1, 13, 14, 20, ..	..	..	..	..	..	..
		1, 5, 16, 20, ..	..	..	..	..	..	..
		1, 5, 20, ..	..	..	..	..	..	..
		1, 6, 15, 20, ..	..	..	..	..	..	..

CHEESE.

No.	NAME.	POSTOFFICE.	Flavor.	Tex- ture.	Style.	Color.	Total.
51	Otto Keilmeyer	Manitowoc, Wis.	37	30	15	10	92
52	Rayl & Drischel	Cambridge City	39	30	15	10	94
53	G. P. Swan	New Washington	34	29	15	10	88
54	Amboy Creamery Co.	Amboy	38	30	15	10	93
1.	Wells Richardson.	Garland.	27. Miller.	38.	Kieith.		
2.	Alderny.	30. Delaval.	28. Jensen.	39.	Norc.		
3.	Hansens.	21. Sharpless Tubular.	30. McAvery's.	40.	Commercial.		
4.	Detz Salt.	22. United States.	31. Boyd.	41.	Errison.		
5.	Grenese Salt.	23. Danish Weston.	32. Open.	42.	Flavorone.		
6.	Worcester Salt.	24. Sharpless Russian.	33. Douglas.	43.	Mann s.		
7.	Dibrow.	25. Jumbo.	35. Skim Milk.	46.	Farrington.		
8.	Diamond Crystal.	26. Simplex.	36. Hansen.	47.	Purdue.		
9.	Colonial.						
10.	Cadillac.						

AMERICAN DAIRY JOURNALS.

The publishers of these journals will, no doubt, gladly send sample copies to those who may apply for them:

American Cheese Maker, Grand Rapids, Mich. Monthly.

American Dairyman, New York. Weekly.

Canadian Dairyman, Toronto, Canada. Semi-Monthly.

Cheese and Dairy Journal, Whitewater, Wis. Monthly.

Chicago Produce, Chicago, Ill. Weekly.

Creamery Journal, Waterloo, Iowa. Monthly.

Dairy and Produce Review, San Francisco, Cal. Weekly.

Dairy Record, St. Paul, Minn. Weekly.

Dairy World, Chicago, Ill., Monthly.

Elgin Dairy Report, Elgin, Ill. Weekly.

Hoard's Dairyman, Fort Atkinson, Wis. Weekly.

Jersey Bulletin and Dairy Farmer, Indianapolis, Ind. Weekly.

Kimball's Dairy Farmer, Waterloo, Iowa. Semi-Monthly.

Milk News, Chicago, Ill. Semi-Monthly.

New York Produce Review and American Creamery, New York City.
Weekly.

St. Paul Dairy Reporter, St. Paul, Minn. Weekly.

Note.—The National oleomargarine and the filled cheese laws are printed in full in the 1897 Report of the Dairy Association. The Indiana pure food law is printed in the 1898 Report of the Dairy Association.

The new, or amendments to the National Oleomargarine Laws are printed in the 1903 Report of the Dairy Association.

INDIANA
FARMERS' INSTITUTES

FOR THE YEAR 1904-05.

BY
W. C. LATTA,
SUPERINTENDENT FARMERS' INSTITUTES.

Purdue University, Lafayette, Indiana,
1905.

Indiana Farmers' Institutes

REPORT OF THE SUPERINTENDENT.

The sixteenth year (1904-5) of the Farmers' Institute work has not differed materially from previous years. More meetings have been held, the Institutes have been more equitably distributed, the work has been better systematized, the co-operation of the local officers has, as a rule, been more effective, and an earnest effort has been made to have the instruction more definitely practical and helpful.

The untimely death, in October, 1904, of Mr. H. F. McMahan, one of the most effective and deservedly popular Institute speakers, was a severe blow to the work.

In the early part of the Institute season the subject of "Good Roads" was presented in many southern counties. Increased attention was given to "Rural School Improvement," and there was a more general and more intelligent effort to make the Institute work interesting and helpful to the young people of the farm. There has been no definite campaign, however, in either of the above lines. The aim has been, rather, to co-operate actively with the local officers along such lines as seemed to them to be most important. There has been but one really new feature of the work for the current year—the holding of a series of summer Institutes for the special benefit of farmers' wives and children.

The work of the year may be summarized as follows:

(1) The preparation of a resume of the Institute work, from its inception in 1882, under the auspices of the State Board of Agriculture, to 1904, and its publication in the biennial report early in 1905;

(2) The arrangement and publication of the schedule of Institutes for 1904-5;

(3) The holding of the seventh annual State Conference of Institute Workers in October, 1904;

(4) The holding of 226 Winter Institutes, 109 being one-day meetings and 117 two-day meetings;

(5) The holding of 31 one-day Summer Institutes in June and early July, 1905.

The important features of the work of the year will be referred to under appropriate headings, below:

ANNUAL CONFERENCE OF FARMERS' INSTITUTE WORKERS.

The Seventh Annual Conference of Farmers' Institute Workers was held at Purdue University, Lafayette, Indiana, October 12-13, 1904. The following is the

PROGRAM OF THE CONFERENCE.

Wednesday, 9:30 a. m.

J. A. Blasdel, Fowler, presiding.

Invocation—Rev. A. W. Conner, pastor Christian Church, Lafayette.

Welcome—President Stone.

Theme: Perfecting Local Organization for Institute Work.

1. Success Attained; How Secured.
Discussion led by D. B. Johnson, Mooresville.
2. Difficulties Encountered; How Overcome.
Discussion led by J. H. Gwaltney, Poseyville.
3. Are Changes, in Plan or Method, Needed?
Discussion led by Mrs. C. N. Lindley, Salem.

Wednesday, 1:30 p. m.

Mrs. Lydia Evans, Plymouth, presiding.

Music.

Theme: Woman's Auxiliaries.

1. Some Good Things They May Accomplish—Miss Grace Erwin Bourbon.
Discussion.
2. What Has Been Done in Illinois—Mrs. S. Noble King, Urbana, Ill.
Questions.
Music.
3. How Perfect These Organizations in Indiana—Mrs. Virginia C. Meredith, Cambridge City.
Questions and discussion.
Music.

Wednesday, 7:30 p. m.

E. B. Hemmer, Huntingburg, presiding.

Theme: Farmers' Institutes and the Rural Schools.

1. What the Rural Schools Should Do for Agriculture—President Stone.
Questions.
2. Progress in Rural School Improvement.
(a) School Gardens—O. J. Kern, County Superintendent of Schools, Rockford, Ill.

- (b) Experiments by School Boys—J. F. Haines, County Superintendent of Schools, Noblesville.
 - (c) Preparation of Teachers—G. M. Wilson, County Superintendent of Schools, Danville.
 - (d) Centralization; Plans for the Future, etc.—Fassett A. Cotton, State Superintendent of Public Instruction, Indianapolis.
3. How Rural School May Co-operate with Farmers' Institutes—W. O. Headlee, County Superintendent of Schools, Rushville.
Questions and discussion.

Thursday, 9:30 a. m.

J. J. Doan, Amo, presiding.

Invocation—Rev. H. M. Bell, pastor Baptist Church, West Lafayette.

Theme: Farmers' Institutes and the Young People.

1. What Has Been Done for the Boys and Girls.
Discussion led by Mrs. J. W. Bates, Broad Ripple.
2. Young People's Sessions.
Discussion led by J. J. W. Billingsley, Malott Park.
3. Why and How Interest and Enlist the Young Folks—H. F. McMahan, Liberty.
Questions and discussion.

Thursday, 1:30 p. m.

F. M. Buckner, Poneto, presiding.

Theme: Committee Reports on Plans for Future Institute Work.

1. As to Permanent Local Organizations—J. H. Gwaltney, chairman.
Questions.
2. As to Woman's Auxiliaries—Mrs. Virginia C. Meredith, chairman.
Questions.
3. As to Rural School and the Young People—H. F. McMahan, chairman.
Questions.
4. As to Arranging for and Conducting the Institutes—J. J. W. Billingsley, chairman.
Questions.
Announcements.
Adjournment.

State Superintendent Cotton was unable to be present, but his deputy, Mr. Lawrence McTurnan, took his place in discussing "Rural School Centralization."

The place of Mr. McMahan was taken by Mr. O. A. Somers, of Kokomo. Both of these substitutes rendered excellent service.

Eighty-eight counties were represented at the Conference by 175 registered delegates. Though the attendance was less than in the two years

previous, the number of counties represented was greater than in any former year. The four counties not represented were Daviess, Gibson, Kosciusko and Parke.

The sudden death, on the eve of the Conference, of Henry F. McMahan, who had been assigned a place on the program, threw a dark pall over the meeting. The regular order was suspended for an hour the afternoon of the first day, to pay a tribute of respect to the memory of Mr. McMahan.

The important features of the Conference were: Discussions on "Local Organization," "Woman's Auxiliaries," "Rural Schools" and the "Young People."

The views of the delegates were formulated by large committees, and their reports, which appear below, were unanimously adopted by the Conference.

REPORT OF COMMITTEE ON PERMANENT ORGANIZATION.

Your committee appointed to consider permanent local organization, after giving the matter due consideration, begs to submit the following report:

It is the sense of this committee that the proposed plan of organization, adopted by the Conference of last year, meets the present needs of the work, and, therefore, should remain as passed by the said Conference.

We would urge, also, that the counties which have not adopted this plan of organization do so in their own interest.

J. H. GWALTNEY, Chairman.

REPORT OF THE COMMITTEE ON WOMAN'S AUXILIARIES.

We recognize that a very close relation exists between the farm and the home on the farm. We believe that whatever promotes the making of better homes naturally increases the efficiency of the individuals in the home, and thus contributes directly to the improved farming which secures a larger income, a better intelligence in methods and a greater joy in country life. Therefore we recommend:

First. That in every Farmers' Institute program at least one session, or part of one session, be given to the consideration of home topics, such as health, clothing, furnishings, food, standards of living, the use of money, etc.

Second. That County Superintendents of Institutes be instructed to secure the co-operation of a committee of women in preparing Institute programs.

Third. That Institute officers be instructed to encourage the organization of local Home Maker's Clubs, with the privilege of separate sessions.

Fourth. That the State Superintendent of Institutes be requested to secure the services of speakers trained in home economics, and to give financial assistance to summer meetings of Home Maker's Clubs.

VIRGINIA C. MEREDITH, Chairman.

REPORT OF THE COMMITTEE ON RURAL SCHOOLS AND THE YOUNG PEOPLE.

It is the sense of this committee that a better sentiment and a higher appreciation of farm life and farm business must be created before the Farmers' Institute and farm life and work will become more attractive and more profitable, and that these conditions can only be secured by the farmers taking more pride in their vocation and by word and act showing a higher appreciation of their calling.

And that we have no cause for complaint on account of the abandonment of the farm by the young men and women of the land who seek other professions, the allurements of which we have magnified by the disparagement of our own.

We recommend that, wherever practicable, joint sessions of Teachers' Associations and Institutes and of Farmers' Institutes be held, and the giving of one-half day sessions of the Farmers' Institutes over to the pupils of the district, or locality, in which the Institute is held, for such work as the teachers and county superintendents may deem best.

ORLANDO A. SOMERS, Chairman.

PAPERS OF LOCAL SPEAKERS.

For a number of years the State Board of Agriculture has kindly permitted the publication of papers of local Institute workers in connection with the report of the State Superintendent of Institutes. Following this report will be found a number of such papers, which are printed without appreciable change or abridgment.

ACKNOWLEDGMENTS.

The undersigned desires to again express his appreciation of the substantial service rendered by the railway companies of the State in granting special rates to the Institute speakers.

He is, also, grateful to the general and local press of the State for many courtesies extended to the general management, and for the publication of numerous and valuable reports of the Institute meetings.

He further takes pleasure in expressing his appreciation of the cordial and effective co-operation of Institute speakers and officers generally, and

of the gratuitous services rendered by the other members of the General Committee on Institutes, as well as by other officers and members of the faculty of Purdue University.

W. C. LATTA,

Superintendent Farmers' Institutes.

Purdue University, Lafayette, Ind., June 30, 1905.

REPORT OF COMMITTEE ON ARRANGING FOR AND CONDUCTING FARMERS' INSTITUTES.

In the selection of places for holding Institutes it is well to take into account the conveniences of travel—the general character of the people for enterprise and intelligence, and the probability of their hearty co-operation together with subjects most likely to interest them.

The Place of Meeting.—Warm, comfortable rooms, easy of access, should be secured.

Advertising the Meetings.—Institutes should be well advertised by using large posters, by posting them two or more weeks in advance of the meeting. By distributing programs of the meetings, through the schools and otherwise, by calling attention to the meetings of the institute on public occasions, postal cards may be used and addressed to individuals requesting their hearty co-operation. The local press should be used freely for weeks in advance; publish the programs; have short paragraphs inserted calling attention to the Institute.

Program.—In the preparation of the program, after having selected the principal subjects, for the Institute, write to the State speakers, giving the trend of the work desired, and request them to make such suggestions as they think may be helpful in the work. They may help you in grouping the subjects so as to get the greater benefits out of the work. Print the programs in time to distribute them quite generally among those who may be expected to attend—holding a number sufficient to accommodate all who attend. Neat, well-printed programs will tend to put a business face on the work of the Institute. In the preparation of programs, select subjects for each session embracing kindred topics, that have a local adaptation to the interest of the people along agricultural lines. In the selection of local speakers, secure men and women who are practical and are known to be successful in the line of the subject they treat. If possible, secure a few young people to take a place on the program and give them a prominence in the work. So far as practical, secure the aid of the schools and local school teachers at the evening sessions. So arrange the order of exercises for plenty of time to discuss the leading topics presented by State and local speakers. Avoid a stuffing of the program with miscellaneous exercises. Some changes are needful, but it is easy to waste time and waste money set apart for Institute work.

Time of Meeting.—At the time appointed for the meeting of the Institute the officers should be at the place promptly and see that everything is in order and receive and greet the people as they come in. See to it that everything, so far as possible, shall contribute to their comfort.

Duties of Chairman.—As the success of the Institute largely depends on the promptness and efficiency of the Chairman, he should see to it that the sessions should begin promptly on time, except for sufficient reasons for delay. The Chairman can add greatly to the interest and enthusiasm by not allowing any of the order of exercises to drag. Change from one topic to another quickly; keep the audience in a state of keen expectancy; call out the experience of local men who may be in attendance and insist upon their giving a little of their experience if they have a local reputation for success in the line of the subject under discussion. Be prompt in putting motions, appointing committees, etc. In a word, put life into the discussions; make few changes in the order of the work provided for in the program.

Keep a careful account of the attendance at each session and the degree of interest manifested, and report the same promptly at the close of the Institute to the Superintendent of the Institute work.

Respectfully submitted,

J. J. W. BILLINGSLEY.

REPORT OF COMMITTEE TO RECOMMEND BOOKS FOR TEACHERS' AND CHILDREN'S READING COURSES AND FOR TRAVELING LIBRARIES.

Your committee appointed at the meeting of the Sixth Annual Conference of Institute Workers, in October, 1903, under the following resolution:

“Resolved, That we recommend this Conference to appoint a committee of three to confer with the managers of the Children's Reading Circle of the State, also with the managers of the Teachers' Reading Circle Work, in order to urge them to introduce more books on Nature Study for the use of the children in the schools, and some good text-book on the study of Agriculture for the teachers of the State.”

Begs leave to report as follows:

First. After a careful survey of the subject your committee is of the opinion that the present illy-co-ordinated and spasmodic efforts in lines of work bearing upon practical agriculture and presented under the general title of Nature Study are due to an imperfect appreciation upon the part of teachers of the real significance and immense importance of the subject. Your committee feels that if good results are to be obtained it is imperative that the attitude of mind of the teachers, both as regards the subject itself and its presentation, be radically changed. Because of

these beliefs it recommends to this conference that the managers of the Teachers' Reading Circle of the State be requested to place upon their list of books for the ensuing year "The Nature Study Idea" by Prof. Liberty H. Bailey, Director of the College of Agriculture of Cornell University. Published by Doubleday, Page & Co.; \$1 net. No more illuminating and suggestive study of the movement to put the child in sympathy with nature and his environments, to the end that his life may be stronger and more resourceful, has as yet been presented.

It is further recommended that this request to the managers of the Teachers' Reading Circle be urged as strongly as possible, since, in the opinion of your committee, in a greater degree than any other recent movement, will the Nature Study movement touch the masses with a new educational impulse.

Second. The committee further recommends that the managers of the Children's Reading Circle include the First Principles of Agriculture, by Goff & Mayne, and Agriculture for Beginners, by Burket, Stevens & Hill, in the list for the seventh and eighth grades; and further, that this conference recommend these books to those teachers of the State who wish to present the underlying principles of agriculture in a systematic manner.

Third. Your committee, at the suggestion of the Superintendent, ventures to exceed the letter of its instructions and make the following further recommendations: It recognizes in the work of the State Library Commission in the establishment of traveling libraries one of the great educational movements of the day, and one which promises much for the advancement of the intellectual ideas of the State. It feels, however, that, considering the large percentage of our population engaged in occupations bringing them in constant and intimate relations with nature, much effective service might be done by the commission in making these relations sympathetic and helpful. Your committee therefore recommends that the State Library Commission be requested to consider the propriety of including in each traveling library a definite percentage of books, say 10 per cent., bearing upon nature in its manifold and important relations to man. It further recommends that the Library Commission, if in its view such a plan is feasible, be requested to put it into operation at as early a date as possible, this latter request being based not merely upon the necessity of some such plan, but also upon its very high intellectual and economic value.

To make such suggestions to the commission as little burdensome as possible, the committee suggests that the following list of books be recommended as meeting the views of this conference under Recommendation 3. Sixty-four titles suggested:

PLANT LIFE.

Plant Relations. J. M. Coulter. D. Appleton & Co.....	\$1 20
The Great World's Farm. Selina Gaye. MacMillan Co.....	1 00
Botany, an Elementary Text. L. H. Bailey. MacMillan Co.....	1 10
First Studies of Plant Life. G. F. Atkinson. Ginn & Co.....	70
How to Know the Wild Flowers. Mrs. Dana. Scribner's.....	2 00
Familiar Flowers of Field and Garden. S. Matthews. D. Appleton & Co.....	1 75
Field Book of American Wild Flowers. S. Matthews. D. Appleton & Co.....	1 75
Corn Plants. F. L. Sargent. Houghton, Mifflin & Co.....	60
Seed Dispersal. W. J. Beal. Ginn & Co.....	40
How to Know the Ferns. Parsons. Scribner's.....	1 50
Mushrooms. Geo. F. Atkinson. Andres & Church, Ithica, N. Y....	3 00
With the Wild Flowers. Maud Going. Baker, Taylor Co.....	1 00
Field, Forest and Wayside Flowers. Maud Going. Baker Taylor Co.	1 50
Our Native Trees. Harriet Keeler. Scribner's.....	2 00
Our Northern Shrubs. Harriet Keeler. Scribner's.....	2 00
Familiar Trees and Their Leaves. S. Matthews. Appletons.....	1 75
The First Book of Forestry. Roth. Ginn & Co.....	1 00
Among Green Trees. Julia E. Rogers. Mumford.....	3 00
Trees, Shrubs and Vines. Parkhurst. Scribner's.....	1 50
Practical Forestry. John Gifford. D. Appleton & Co.....	1 20
Ten New England Blossoms. C. H. Weed. Houghton, Mifflin & Co.	1 25
Flowers and Their Insect Visitors. Gibson. Newson & Co.....	1 00
How to Make School Gardens. Hemenway. Doubleday, Page & Co.	1 00

ANIMALS OTHER THAN INSECTS AND BIRDS.

Animal Life. Jordan & Kellogg. D. Appleton & Co.....	\$1 25
Wild Life in Orchard and Field. Ernest Ingersoll. Harpers.....	2 00
Wild Neighbors. Ernest Ingersoll. Harpers.....	2 00
Wild Animals I Have Known. Ernest T. Seton. Scribner's.....	2 00
Kindred of the Wild. Roberts. L. C. Page.....	2 00
Wild Life Near Home. Dallas L. Sharp. Century Co.....	2 00
Ways of the Wood Folk. W. J. Long. Ginn & Co.....	50
Wilderness Ways. W. J. Long. Ginn & Co.....	45
Secrets of the Woods. W. J. Long. Ginn & Co.....	50
Familiar Life in Field and Forest. S. Matthews. D. Appleton & Co.	1 75
The Story of the Fishes. J. N. Baskett. D. Appleton & Co.....	65
Familiar Fish. Macarthy. D. Appleton & Co.....	1 50
Story of the Birds. James N. Baskett. D. Appleton & Co.....	65
The Bird Book. Ekstorm. D. C. Heath & Co.....	80

Birds of Village and Field. Florence Merriam. Houghton, Mifflin & Co.....	2 00
The Relation of Birds to Man. Weed and Dearborn. Lippincott...	2 50
The Woodpeckers. Eckstorm. Houghton, Mifflin & Co.....	1 00
How to Attract the Birds. Neltje Blanchan. Doubleday, Page & Co.	1 35
Keys to Determine Species of Birds.	
Handbook of Birds of Eastern North America. Chapman. Appleton	3 00
Color Key to North American Birds. Chapman & Reed. Doubleday, Page & Co.....	2 50

INSECTS.

Everyday Butterflies. S. H. Scudder. Houghton, Mifflin & Co.....	\$2 00
Moths and Butterflies. Mary C. Dickerson. Ginn & Co.....	2 50
Catterpillars and Their Moths. Elliot & Soule. Century Co.....	2 00
Outdoor Studies. James B. Needham. American Book Co.....	40
The Bee. Malterlinck. Dodd, Mead & Co.....	1 50
The Bee People. Margaret W. Morley. A. C. McClurg.....	1 25
Wasps and Their Ways. Margaret W. Morley. Dodd, Mead & Co.	1 50
Nature Biographies. Weed. Doubleday, Page & Co.....	1 35
The Ways of the Six-Footed. Anna B. Comstock. Ginn & Co.....	40
Insect Life. J. H. Comstock. Appleton & Co.....	1 75
Manual for Study of Insects. J. H. Comstock. Comstock Co., Ithaca, N. Y.....	3 75

ASTRONOMY AND GEOLOGY.

Starland. Ball. Ginn & Co.....	\$1 00
A Study of the Sky. Howe. Flood and Vincent.....	1 00
Geological Story Briefly Told. Dana. American Book Co.....	1 15
The Story of Our Continent. Shaler. Ginn & Co.....	85
More Expensive Books, Published by Doubleday, Page & Co., but of Especial Interest and Value to Farmers.	
Nature's Garden. Neltje Blanchan.....	3 00
Bird Neighbors. Neltje Blanchan	2 00
Bird Homes. Dugmore.....	3 00
American Animals. Stone & Cram.....	4 00
Food and Game Fishes. Jordan & Evermann.....	4 00

This list has been selected after an examination of nearly four hundred books, and is practically that recommended by the New York Lectures on the Farm Library.

Fourth. Your Committee would further commend the following books as suitable for the District School Library, or for the Juvenile Sec-

tions of Traveling Libraries. Each of the books has been examined by some member of the committee, and the list is submitted as perhaps of some value in the selection of nature books for children. Thirty-two titles:

Plants and Their Children. Dana. American Book Company.....	\$0 65
Mother Nature's Children. Gould. Ginn & Co.....	1 00
Flowers and Their Friends. Margaret Morley. Ginn & Co.....	60
Seed Babies. Margaret Morley. Ginn & Co.....	35
First Studies of Plant Life. Atkinson. Ginn & Co.....	70
Chapters of Plant Life. Herrick. American Book Co.....	60
Glimpses of Plant World. Bergen. Ginn & Co.....	50
The Flower People. Hale. Ginn & Co.....	45
Poetry of the Seasons. Lovejoy. Silver, Burdett & Co.....	60
Nature in Verse. Lovejoy. Silver, Burdett & Co.....	60
Electrical Experiments. Bonney. Whittaker & Co.....	75
Squirrels and Other Fur Bearers. John Burroughs. Houghton, Mifflin & Co.....	1 00
Ways of Wood Folk. Long. Ginn & Co.....	50
Wilderness Ways. Long. Ginn & Co.....	45
Secrets of the Woods. Long. Ginn & Co.....	50
Stories of Animal Life. Holder. American Book Co.....	60
Stories of Insect Life. Murtfeldt & Weed. Ginn & Co.....	35
Short Stories of Our Shy Neighbors. Kelly. American Book Co..	60
Wasps and Their Ways. Morley. Dodd, Mead & Co.....	1 50
Ways of the Six-Footed. A. B. Comstock. Ginn & Co.....	40
Insect Folks. Morley. Ginn & Co.....	45
Bird Neighbors. Neltje Blanchan. Doubleday, Page & Co.....	2 00
The Story of Birds. Baskett. Appletons.....	60
Stories of Bird Land, two volumes. Chase. Educational Publishing Company	Each 30
Birds of Song and Story. E. and J. Grinnell. Mumford.....	1 00
Our Native Birds: How to Protect Them and How to Attract Them to Our Homes. D. Lange. Macmillan Co.....	1 00
The Jungle Book. Kipling. Century Co.....	1 50
The Second Jungle Book. Kipling. Century Co.....	1 50
Life on the Farm. Shepard. A. Flannagan & Co.....	50
Stories of Our Mother Earth. Whittaker & Ray. San Francisco....	50
Brooks & Brook Basins. Frye. Ginn & Co.....	70
The Earth and Sky. Stickney. Ginn & Co.....	85

Respectfully submitted,

STANLEY COULTER,
W. B. FLICK,
MRS. OLIVER KLINE,

Committee.

The special committee, appointed to draft appropriate resolutions on the death of Mr. H. F. McMahan, submitted the following:

REPORT OF COMMITTEE ON THE DEATH OF H. F. McMAHAN.

At this, the annual meeting of the Officers and Farmers' Institute Workers of the State, many of us had anticipated the pleasure of meeting and greeting our brother and fellow-worker, H. F. McMahan, but, to our great sorrow, we have the sad intelligence of his sudden and unexpected death. To us who are familiar with his efficiency and helpfulness in the work, and in other enterprises and undertakings in his life, his taking out of this life is seemingly at a time when his sturdy and noble manhood gave promise of a broader and more effective service in the future of his life-work.

That, while it is ours to bow our heads in sorrow to the inevitable, yet, in a retrospect of his work during the few brief years that we have known him, we are led to exclaim:

"How much there was in him! Who was more loving in his home life? Who more steadfast to his friendships? Who more true to his word? Who more earnest in his endeavors and efforts to learn the whole truth in the lines of his work? Who more ready to help others to higher and broader spheres of usefulness? Who more true in all that goes to make that nobleness of character so faithfully wrought out by our friend and fellow-worker?"

That we tender to his family our heartfelt sympathy, and commend them to the care and keeping of our Heavenly Father, who, alone, can bring peace—perfect peace—to sorrowing hearts.

Signed by the Committee

J. J. W. BILLINGSLEY.
OLIVER KLINE,
ROBERT H. WOOD,
MRS. C. N. LINDLEY,
MRS. VIRGINIA C. MEREDITH.
J. H. SKINNER.

WINTER INSTITUTES.

The Institute season for 1904-05 opened November 15, 1904, and continued without interruption, except during the holiday season and the week of the Corn School, January 23-28, 1905, to the close early in March.

The schedule of meetings previously arranged by the State Superintendent of Institutes is as follows:

SCHEDULE OF WINTER FARMERS' INSTITUTES.

Annual meetings designated by **bold-face type**.

Speakers assigned but one day of two-day institutes have dates on the right of names. In case of no figures on the right the speaker is assigned both days.

Place of Meeting and Chairman of Institute.	Date.	Assigned Speakers.
Brown , Needmore.....	November 15.....	J. A. Burton.
Wm. M. Waltman, Beanblossom.		
Brown , Nashville.....	November 16.....	J. A. Burton.
Wm. M. Waltman, Beanblossom.	November 17.....	Mrs. L. G. Fitzpatrick.
Clark , New Washington.....	November 14.....	J. H. Gwaltney.
W. P. Borttorff, Charlestown, R. 2.		
Clark , Otisco.....	November 15.....	J. H. Gwaltney.
W. P. Borttorff, Charlestown, R. 2.		
Crawford , English.....	November 16.....	U. M. Stewart (16).
Jno. H. Jenkins, Magnolia.....	November 17.....	J. H. Gwaltney.
Pike , Winslow.....	November 18.....	J. A. Burton (18).
A. H. Johnson, Petersburg.....	November 19.....	J. H. Gwaltney.
Perry , Main.....	November 14.....	L. A. Stockwell.
J. J. Wheeler, Rome.....	November 15.....	W. B. Anderson.
Perry , Derby.....	November 16.....	L. A. Stockwell.
J. J. Wheeler, Rome.....	November 17.....	W. B. Anderson.
Spencer , Rockport.....	November 18.....	Prof. H. E. Van Norman (19).
C. C. Dawson, Grandview.....	November 19.....	L. A. Stockwell.
Dubois , Ireland.....	November 16.....	J. J. W. Billingsley.
E. B. Hemmer, Huntingburg.		
Dubois , Ferdinand.....	November 17.....	J. J. W. Billingsley.
E. B. Hemmer, Huntingburg.		
Vanderburgh , McCutchanville.....	November 18.....	J. J. W. Billingsley.
W. C. Goldsmith, Evansville, R. 5	November 19.....	W. B. Anderson (19).
Decatur , Greensburg.....	November 21.....	E. H. Collins.
B. F. Gaston, Westport, R. 2.....	November 22.....	D. W. King (22).
Ripley , Napoleon.....	November 23.....	D. W. King (23).
T. G. Day, Correct.....	November 24.....	E. H. Collins.
Dearborn , Ebenezer Church.....	November 25.....	E. H. Collins.
Jno. D. Curtis, Aurora.....	November 26.....	D. W. King (26).
Jennings , Butlerville.....	November 21.....	D. W. King (21).
Jno. E. Amick, Scipio.....	November 22.....	J. A. Burton.
Jefferson , Tryus Church.....	November 23.....	J. A. Burton.
R. H. Wood, Madison, R. 4.....	November 24.....	D. W. King (24).
Scott , Lexington.....	November 25.....	U. M. Stewart.
A. H. Collings, Vienna, R. 1.		
Switzerland , Vevay.....	November 25.....	J. A. Burton.
Jno. P. Porter, Vevay.....	November 26.....	J. W. Cooperider.
Owen , Quincy.....	November 28.....	J. A. Burton.
A. L. Pochin, Spencer.		

Place of Meeting and Chairman of Institute.	Date.	Assigned Speakers.
Owen, Freedom..... A. L. Pochin, Spencer.	November 29.....	J. A. Rurton, D. W. King.
Shelby, Boggstown..... O. L. Coyle, Shelbyville.	November 30.....	J. J. W. Billingsley.
Shelby, Flat Rock..... O. L. Coyle, Shelbyville.	December 1.....	J. J. W. Billingsley.
Decatur, St. Paul..... B. F. Gaston, Westport, R. 2.	December 2.....	J. J. W. Billingsley.
Decatur, New Point..... B. F. Gaston, Westport.	December 3.....	J. J. W. Billingsley.
Greene , Bloomfield.....	November 28.....	D. W. King (28).
Geo. B. Taylor, Bloomfield.....	November 29.....	J. H. Gwaltney.
Dubois , Huntingburg.....	November 30.....	D. W. King (30).
E. B. Hemmer, Huntingburg.....	December 1.....	J. H. Gwaltney.
Harrison , Elizabeth.....	December 2.....	D. W. King.
T. W. Eurton, Elizabeth.....		
Harrison, Laconia.....	December 3.....	D. W. King.
T. W. Eurton, Elizabeth.....		
Daviess , Washington.....	December 2.....	W. J. Ritterskamp (2).
P. McHenry, Washington.....	December 3.....	J. H. Gwaltney.
Washington, Little York..... F. J. Heacock, Canton.	December 1.....	D. B. Johnson.
Washington, Kossuth..... F. J. Heacock, Canton.	December 2.....	D. B. Johnson.
Washington, Pekin..... F. J. Heacock, Canton.	December 3.....	D. B. Johnson.
Hendricks , Danville.....	November 30.....	U. M. Stewart.
J. J. Doan, Amo.....	December 1.....	Mrs. C. N. Lindley (1).
Madison, Alexandria.....	December 2.....	Mrs. O. E. Carter (2).
I. B. Jones, Pendleton.....	December 3.....	U. M. Stewart.
Allen , Fort Wayne.....	November 28.....	M. L. Fisher (28).
Geo. V. Kell, Huntertown.....	November 29.....	E. C. Martindale.
Grant, Swayzes.....	November 30.....	E. C. Martindale.
A. A. Burrier, Marion R. 1.....	December 1.....	Mrs. N. De Vilbiss (1).
Delaware Albany.....	December 2.....	E. C. Martindale.
J. P. Prigg, Daleville R. 1.....		
Johnson, White River Township..... H. E. Lochry, Franklin.	December 3.....	E. C. Martindale.
Jay , Portland.....	December 2.....	J. P. Davis (2).
S. K. Bell, Portland.....	December 3.....	W. B. Flick.
Montgomery , Crawfordsville.....	November 29.....	A. P. Burnside.
Geo. Harshbarger, Ladoga.....	November 30.....	Prof. A. T. Wiancko 30.
Fountain, Covington.....	December 1.....	Mrs. V. C. Meredith.
Theo. Romine, Veedersburg.....		
Fountain, Kingman.....	December 2.....	Mrs. V. C. Meredith.
Theo. Romine, Veedersburg.....		
Warren, Pine Village.....	December 3.....	Mrs. V. C. Meredith.
C. C. Evans, Hedrick.....		
Wells, Ossian.....	November 28.....	A. G. Burkhart.
F. M. Buckner, Poneto.....		
Wells, Keystone.....	November 29.....	A. G. Burkhart.
F. M. Buckner, Poneto.....		
White, Chalmers.....	December 1.....	A. G. Burkhart.
S. W. Myers, Monticello.....		
White, Monon.....	December 2.....	A. G. Burkhart.
S. W. Myers, Monticello.....		
White, Burnett's Creek..... S. W. Myers, Monticello.	December 3.....	A. G. Burkhart.

Place of Meeting and Chairman of Institute.	Date.	Assigned Speakers.
Lake, Brunswick	December 5	J. J. W. Billingsley.
C. B. Benjamin, Leroy.		
Lake, Lowell	December 6	J. J. W. Billingsley.
C. B. Benjamin, Leroy.		
Newton, Mt. Ayr	December 7	J. J. W. Billingsley.
W. W. Miller, Mt. Ayr	December 8	J. W. Mills (8).
White, Monticello	December 9	Prof. H. E. Van Norman (9).
S. W. Myers, Monticello	December 10	J. J. W. Billingsley.
Adams, Decatur	December 5	E. C. Martindale.
C. D. Kunkle, Decatur	December 6	D. F. Maish (6).
Vermillion, Dana	December 7	Chas. Davis (7).
Bert Cook, Quaker	December 8	O. F. Lane.
Bartholomew, Columbus	December 5	U. M. Stewart.
John L. Jones, Columbus R. 3	December 6	A. G. Burkhart (6).
Marion, Broad Ripple	December 7	J. W. Mills (7).
J. J. Millhouse, Valley Mills	December 8	U. M. Stewart.
Morgan, Monrovia	December 9	U. M. Stewart.
O. P. Macy, Mooresville.		
Morgan, Eminence	December 10	U. M. Stewart.
O. P. Macy, Mooresville.		
Elkhart, Goshen	December 5	A. P. Burnside.
S. A. Hoover, Goshen	December 6	J. M. Cantley (6).†
Laport, Westville	December 7	A. P. Burnside.
H. W. Henry, Laporte.		
Laport, Lacrosse	December 8	A. P. Burnside.
H. W. Henry, Laporte.		
Laporte, Hanna	December 9	A. P. Burnside.
H. W. Henry, Laporte.		
Floyd, Georgetown	December 5	J. H. Gwaltney.
J. S. Summers, Georgetown	December 6	D. W. King (6).
Spencer, Chrisney	December 7	D. W. King (7).
C. C. Dawson, Grandview	December 8	J. H. Gwaltney.
Warrick, Boonville	December 9	J. W. Cooperider.
C. C. Ferguson, Boonville	December 10	D. W. King (10).
Owen, Spencer	December 5	D. W. King (5).
A. L. Pochin, Spencer	December 6	J. W. Cooperider.
Lawrence, Mitchell	December 7	J. W. Cooperider.
R. S. Duncan, Bedford	December 8	D. W. King (8).
Orange, Grleans	December 9	D. W. King (9).
J. W. Monical, Orleans	December 10	J. H. Gwaltney.
Monroe, Bloomington	December 7	A. G. Burkhart.
J. B. Kirby, Bloomington	December 8	W. B. Anderson (8).
Martin, Loogootee	December 9	W. B. Anderson (9).
A. C. Porter, Loogootee	December 10	A. G. Burkhart.
Knox, Freelandville	December 10	W. B. Anderson.
Capt. Ellis House, Bicknell.		
Shelby, Shelbyville	December 12	Prof. H. E. Van Norman (12).
O. L. Coyle, Shelbyville	December 13	A. G. Burkhart.
Franklin, Brookville	December 14	A. G. Burkhart.
Harry M. Stoops, Brookville	December 15	Mrs. O. E. Carter.
Ohio, Mt. Pleasant	December 16	Mrs. O. E. Carter.
M. L. Harris, Rising Sun	December 17	A. G. Burkhart.
Hancock, Willow	December 12	J. B. Burris.
Vard Finnell, Maxwell.		
Randolph, Modoc	December 13	J. B. Burris.
I. J. Farquhar, Modoc, R. 27.		
Wells, Bluffton	December 14	J. B. Burris.
F. M. Buckner, Poneto	December 15	Alva Agee (15).
Huntington, Warren	December 16	C. B. Benjamin.
Oliver Kline, Huntington, R. 1.		

Place of Meeting and Chairman of Institute.	Date.	Assigned Speakers.
Huntington, Mt. Etna..... Oliver Kline, Huntington, R. 1.	December 17.....	C. B. Benjamin.
Tippecanoe, Romney..... Wilber F. Kolb, Lafayette, R. 5.	December 17.....	A. P. Burnside.
Lagrange, Stroh..... C. N. Libey, Lima.	December 12.....	Alva Agee.
Lagrange, Topeka..... C. N. Libey, Lima.	December 13.....	Alva Agee.
Whitley, Churubusco..... N. F. Watson, Columbia City, R. 7.	December 14.....	Alva Agee.
Wabash, Lafontaine..... Jas. E. Mack, Wabash, R. 1.	December 16.....	Alva Agee.
Wabash, North Manchester..... Jas. E. Mack, Wabash, R. 1.	December 17.....	Alva Agee.
Knox , Oaktown.....	December 12.....	W. D. Zinn.
Capt. Ellis House, Bicknell.....	December 13.....	Miss M. Waters.
Knox, Fritchton.....	December 14.....	Miss M. Waters.
Capt. Ellis House, Bicknell.....	December 15.....	W. D. Zinn.
Jackson, Brownstown.....	December 15.....	J. W. Cooperider.
J. W. Luckey, Seymour.		
Washington , Campbellsburg.....	December 16.....	J. W. Cooperider (16).
F. J. Heacock, Canton.....	December 17.....	W. D. Zinn.
Pike, Algiers..... A. H. Johnson, Petersburg.	December 15.....	J. H. Gwaltney.
Vanderburgh, St. Joe..... W. C. Goldsmith, Evansville, R. 5.	December 17.....	J. H. Gwaltney.
Noble , Albion..... Perry J. Stanley, Albion.	December 19.....	D. B. Johnson.
Noble, Kendallville..... Perry J. Stanley, Albion.	December 20.....	D. B. Johnson.
Huntington , Roanoke.....	December 21.....	C. B. Benjamin.
Oliver Kline, Huntington, R. 1.		
Huntington, Markle..... Oliver Kline, Huntington, R. 1.	December 22.....	C. B. Benjamin.
Monroe, South Granger..... J. B. Kirby, Bloomington.	December 19.....	W. D. Zinn.
Monroe, Harrodsburg..... J. B. Kirby, Bloomington.	December 20.....	W. D. Zinn.
Putnam, Cloverdale..... L. A. Stockwell, Cloverdale.	December 21.....	W. D. Zinn.
Putnam, Bainbridge..... L. A. Stockwell, Cloverdale.	December 22.....	W. D. Zinn.
Benton, Wadena..... J. A. Blasdel, Fowler, R. 2.	December 20.....	J. H. Gwaltney.
Boone, Terhune..... R. G. Holloman, Lebanon, R. 7.	December 21.....	J. H. Gwaltney.
Tipton, Sharpsville..... Pernal Blazer, Tipton.	December 22.....	J. H. Gwaltney.
Boone, Jamestown..... R. G. Holloman, Lebanon, R. 7.	December 23.....	J. H. Gwaltney.
Rush, Manila..... W. L. Brown, Rushville.	December 20.....	E. C. Martindale.
Rush, Carthage..... W. L. Brown, Rushville.	December 21.....	E. C. Martindale.
Greene, Lyons.....	December 27.....	Prof. W. C. Latta (27).
George B. Taylor, Bloomfield.....	December 28.....	W. B. Anderson.
Vigo, Honey Creek Grange.....	December 29.....	H. N. Slater (29).
J. S. Tyler, Terre Haute, R. 4.....	December 30.....	W. B. Anderson.
Posey , Poseyville.....	January 6.....	Wm. H. Jack (6).
J. H. Gwaltney, Poseyville.....	January 7.....	J. W. Cooperider.

Place of Meeting and Chairman of Institute.	Date.	Assigned Speakers.
Boone , Lebanon	January 6	Prof. J. H. Skinner (7).
R. G. Holloman, Lebanon, R. 7	January 7	E. C. Martindale.
Adams , Berne	January 7	W. A. Hart.
C. D. Kunkle, Decatur.		
Randolph , Winchester	January 6	T. S. Nugen (6).
I. J. Farquhar, Modoc, R. 27	January 7	A. G. Burkhart.
Tippecanoe , Dayton	January 7	Prof. H. E. Van Norman.
W. F. Kolb, Lafayette, R. 5.		
Franklin , Fairfield	January 6	T. A. Coleman (6).
Harry M. Stoops, Brookville	January 7	D. B. Johnson.
Lagrange , Lagrange	January 9	A. G. Burkhart.
C. N. Libey, Lima	January 10	B. M. Thorne (10).
Steuben , Angola	January 11	A. G. Burkhart.
T. W. Teegarden, Pleasant Lake.	January 12	J. M. Cantley (12).
DeKalb , St. Joe Station	January 13	J. M. Cantley (13).
H. M. Widney, St. Joe	January 14	A. G. Burkhart.
Noble , La Otto	January 9	D. B. Johnson.
Perry J. Stanley, Albion.		
Noble , Wolf Lake	January 10	D. B. Johnson.
Perry J. Stanley, Albion.		
Kosciusko , Milford	January 11	D. B. Johnson.
H. W. Reber, Warsaw.		
Kosciusko , North Webster	January 12	D. B. Johnson.
H. W. Reber, Warsaw.		
Marshall , Plymouth	January 13	Haines (13).
David J. Van Vactor, Plymouth.	January 14	J. P. Davis.
Newton , Kentland	January 9	J. J. W. Billingsley.
W. W. Miller, Mt. Ayr.	January 10	J. H. Gwaltney.
Benton , Boswell	January 11	J. H. Gwaltney (11).
J. A. Blasdel, Fowler, R. 2	January 12	J. J. W. Billingsley.
Warren , Williamsport	January 13	J. J. W. Billingsley.
C. C. Evans, Hedrick	January 14	Prof. A. T. Wiancko (14).
Blackford , Hartford City	January 9	Mrs. V. C. Meredith.
O. K. Moore, Hartford City	January 10	T. S. Nugen (10).
Delaware , Muncie	January 11	T. S. Nugen (11).
J. P. Prizg, Daleville, R. 1	January 12	Mrs. V. C. Meredith.
Grant , Marion	January 13	Mrs. V. C. Meredith.
A. A. Burrier, Marion, R. 1	January 14	J. W. Mills.
Howard , Kokomo	January 9	J. B. Burris.
Jno. Ingels, Center.	January 10	T. Fouts (10).
Clinton , Middle Fork	January 11	T. Fouts (11).
D. F. Maish, Frankfort	January 12	J. B. Burris.
Carroll , Flora	January 13	J. B. Burris.
J. W. Eikenberry, Bringham.		
Carroll , Deer Creek	January 14	J. B. Burris.
J. W. Eikenberry, Bringham.		
Martin , Burns City	January 10	O. F. Lane.
A. C. Porter, Loogootee.		
Sullivan , Fairbanks	January 11	O. F. Lane.
Chas. Lawson, Staffordshire	January 12	U. M. Stewart (12).
Clay , Center Point	January 13	U. M. Stewart (13).
Maj. R. L. Kennedy, Center Point.	January 14	O. F. Lane.
Porter , Valparaiso	January 9	A. O. Lockridge.
L. G. Furness, Furnessville	January 10	Miss Grace Erwin (10).
Laporte , Laporte	January 11	A. O. Lockridge.
H. W. Henry, Laporte	January 12	J. H. Gwaltney (12).
St. Joe , South Bend	January 13	O. A. Somers (13).
E. A. Metzger, Granger	January 14	A. O. Lockridge.

Place of Meeting and Chairman of Institute.	Date.	Assigned Speakers.
Fayette , Connersville	January 9	T. A. Coleman (9).
Grant Williams, Connersville, R. 3	January 10	E. C. Martindale.
Jackson , Mooresville	January 11	J. A. Burton.
J. W. Luckey, Seymour.		
Ripley , Versailles	January 11	E. C. Martindale.
T. G. Day, Correct	January 12	J. A. Burton (12).
Lawrence , Heltonville	January 13	J. A. Burton (13).
R. S. Duncan, Bedford	January 14	E. C. Martindale.
Miami , Macy	January 9	Freeman (9).
B. F. Nash, Peru	January 10	E. H. Collins.
Fulton , Rochester	January 11	B. M. Thorne (11).
Frank Montgomery, Rochester ..	January 12	E. H. Collins.
Elkhart , Nappanee	January 13	Prof. J. Troop (13).
S. A. Hoover, Goshen	January 14	E. H. Collins.
Dearborn , Manchester	January 9	U. M. Stewart.
Jno. D. Curtis, Aurora		
Scott , Scottsburg	January 10	L. A. Stockwell.
A. H. Collings, Vienna, R. 1.		
Orange , Bromer	January 11	J. W. Cooperider.
J. W. Monical, Orleans		
Orange , Paoli	January 12	J. W. Cooperider.
J. W. Monical, Orleans		
Harrison , Crandall	January 13	J. W. Cooperider.
T. W. Eurlon, Elizabeth		
Harrison , DePauw	January 14	J. W. Cooperider.
T. W. Eurlon, Elizabeth		
Montgomery , Waveland	January 16	Mrs. V. C. Meredith.
Geo. Harshbarger, Ladoga		
Montgomery , Darlington	January 17	Mrs. V. C. Meredith.
Geo. Harshbarger, Ladoga		
Clinton , Frankfort	January 18	Prof. J. H. Skinner (18).
D. E. Maish, Frankfort	January 19	Mrs. V. C. Meredith.
Tippecanoe , Lafayette	January 20	D. F. Maish.
Wilbur F. Kolb, Lafayette, R. 5.	January 21	Mrs. V. C. Meredith.
Pulaski , Winamac	January 16	W. B. Flick.
J. E. Lackey, Medaryville	January 17	T. Fouts (17).
Starke , North Judson	January 18	Prof. H. E. Van Norman (18).
Fred Garing, North Judson	January 19	W. B. Flick.
Lake , Crown Point	January 20	W. B. Flick (20).
C. B. Benjamin, Leroy	January 21	J. J. W. Billingsley.
Cass , Walton	January 16	A. G. Burkhart.
J. M. Cantley, Logansport		
Jasper , Remington	January 17	Mrs. L. G. Fitzpatrick (18).
Wm. Augspurger, Rensselaer R. 3	January 18	A. G. Burkhart.
Jasper , Rensselaer	January 19	Mrs. M. L. Fisher (19).
Wm. Augspurger, Rensselaer R. 3	January 20	A. G. Burkhart.
Jasper , Wheatfield	January 21	A. G. Burkhart.
Wm. Augspurger, Rensselaer R. 3		
Henry , New Castle	January 16	J. M. Cantley (16).
Will O'Harra, Mt. Summit R. 1	January 17	J. H. Gwaltney.
Hancock , Greenfield	January 18	A. W. Butler (18).
Vard Finnell, Maxwell	January 19	J. H. Gwaltney.
Hendricks , Pittsboro	January 20	G. P. Newsom (20).
J. J. Doan, Amo	January 21	J. H. Gwaltney.
Jackson , Seymour	January 16	Mrs. L. G. Fitzpatrick (16).
J. W. Luckey, Seymour	January 17	Alva Agee.
Johnson , Franklin	January 18	G. P. Newsom (18).
H. E. Lochry, Franklin	January 19	Alva Agee.
Rush , Rushville	January 20	J. A. Burton (20).
W. L. Brown, Rushville	January 21	Alva Agee.

Place of Meeting and Chairman of Institute.	Date.	Assigned Speakers.
Porter, McCool L. G. Furness, Furnessville.	January 17.	J. J. W. Billingsley.
Pulaski, Medaryville	January 18.	T. Fouts (18).
J. E. Lackey, Medaryville	January 19.	J. J. W. Billingsley.
Porter, Kouts.	January 20.	J. B. Burris.
L. G. Furness, Furnessville.		
Stark, Knox Fred Garing, North Judson.	January 21.	J. B. Burris.
Kosciusko, Mentone.	January 17.	J. B. Burris.
H. W. Reber, Warsaw.		
Kosciusko , Warsaw	January 18.	B. M. Thorne (18).
H. W. Reber, Warsaw.	January 19.	J. B. Burris.
Putnam , Greencastle	January 20.	D. B. Johnson.
L. A. Stockwell, Cloverdale.	January 21.	Prof. J. H. Skinner (21).
Jennings, Scipio	January 30.	Mrs. V. C. Meredith.
Jno. E. Amick, Scipio.		
Bartholomew, Azalia.	January 31.	Mrs. V. C. Meredith.
Jno. L. Jones, Columbus, R. 3.		
Bartholomew, Newberne.	February 1.	Mrs. V. C. Meredith.
Jno. L. Jones, Columbus, R. 3.		
Fayette, Falmouth	February 2.	Mrs. V. C. Meredith.
Grant William, Connersville, R. 3		
Wayne , Cambridge City	February 3.	E. H. Collins (3). †
Thos. A. Henby, Cambridge City, R. 14.	February 4.	Mrs. V. C. Meredith.
Howard, Sycamore Jno. Ingels, Center.	January 31.	A. G. Burkhardt.
Hamilton , Noblesville	February 1.	W. B. Flick (1).
Perry Johnson, Noblesville.	February 2.	A. G. Burkhardt.
Marion, West Newton	February 3.	Mrs. L. G. Fitzpatrick (3).
J. J. Milhous, Valley Mills	February 4.	A. G. Burkhardt.
Tippecanoe, Montmorenci.	February 4.	Prof. J. Troop.
Wilber F. Kolb, Lafayette, R. 5.		
Madison , Anderson	February 7.	J. B. Burris.
I. V. Busby, Anderson	February 8.	Mrs. V. C. Meredith.
Randolph, Parker	February 8.	A. G. Burkhardt.
I. J. Farquhar, Modoc, R. 27.		
Wayne, Green's Fork	February 9.	A. G. Burkhardt.
Thos. A. Henby, Cambridge City, R. 14.	February 10.	Mrs. V. C. Meredith.
Union , Liberty	February 10.	J. H. Gwaltney.
T. C. Burnside, Liberty.	February 11.	Mrs. V. C. Meredith (11).
Morgan , Mooresville.	February 6.	A. W. Butler (6).
O. P. Maez, Mooresville.	February 7.	J. H. Gwaltney.
Hamilton, Arcadia	February 8.	J. H. Gwaltney.
Perry Johnson, Noblesville.		
Hamilton, Carmel	February 9.	J. H. Gwaltney.
Perry Johnson, Noblesville.		
Allen, Huntertown	February 6.	E. C. Martindale.
Geo. V. Kell, Huntertown.		
Steuben, Ashley	February 7.	E. C. Martindale.
T. W. Teegarden, Pleasant Lake.		
Allen, Monroeville	February 8.	E. C. Martindale.
Geo. V. Kell, Huntertown.		
Allen, Hoagland.	February 9.	E. C. Martindale.
Geo. V. Kell, Huntertown.		
Cass , Logansport	February 10.	E. C. Martindale.
J. M. Cantley, Logansport.	February 11.	Prof. H. E. Van Norman (10).
Parke , Rockville	February 6.	D. F. Maish (6).
Lewis Boyd, Rockville.	February 7.	D. B. Johnson.
Montgomery, Ladoga	February 8.	D. B. Johnson.
Geo. Harshbarger, Ladoga.		
Fountain , Veedersburg.	February 9.	G. P. Newsom (9).
Theo. Romine, Veedersburg	February 10.	D. B. Johnson.
Warren, State Line.	February 11.	D. B. Johnson.
Cyrus C. Evans, Hedrick.		

Place of Meeting and Chairman of Institute.	Date.	Assigned Speakers.
Gibson, Ft. Branch	February 13.....	E. C. Martindale.
A. G. Holcomb, Ft. Branch.....	February 14.....	J. H. Gwaltney (14).
Warriek, Yankeetown.....	February 15.....	J. H. Gwaltney (15).
C. C. Ferguson, Boonville.....	February 16.....	E. C. Martindale.
Posey, Mt. Vernon.....	February 17.....	W. J. Ritterskamp (17).
J. H. Gwaltney, Poseyville.....	February 18.....	E. C. Martindale.
Miami, Bunker Hill	February 13.....	U. M. Stewart.
B. F. Nash, Peru.....	February 14.....	Prof. W. C. Latta (14).
Cass, Lucerne.....	February 15.....	U. M. Stewart.
J. M. Cantley, Logansport.....		
Fulton, Kewanna.....	February 16.....	Mrs. V. C. Meredith.
Frank Montgomery, Rochester.....		
Carroll, Owaseo	February 17.....	D. F. Maish (17).
J. W. Eikenberry, Bringham.....	February 18.....	Mrs. V. C. Meredith.
Clay, Bowling Green.....	February 13.....	Chas. Davis (13).
Maj. R. L. Kennedy, Center Point.....	February 14.....	J. B. Burris.
Vigo, Terre Haute	February 15.....	Prof. H. E. Van Norman (15).
J. S. Tyler, Terre Haute, R. 4.....	February 16.....	J. B. Burris.
Daviess, Elnora.....	February 17.....	W. B. Anderson (17).
P. McHenry, Washington.....	February 18.....	J. B. Burris.
Delaware, Yorktown	February 14.....	W. A. Hart.
J. P. Prigg, Daleville, R. 1.....		
Wabash, Roann.....	February 15.....	D. B. Johnson.
Jas. E. Jack, Wabash, R. 1.....		
Wabash, Wabash	February 16.....	D. B. Johnson.
Jas. E. Jack, Wabash, R. 1.....		
Lake, Leroy.....	February 17.....	D. B. Johnson.
C. B. Benjamin, Leroy.....		
Henry, Mooreland	February 20.....	Mrs. V. C. Meredith.
Will O'Harra, Mt. Summit, R. 1.....		
Henry, Middletown	February 21.....	Mrs. V. C. Meredith.
Will O'Harra, Mt. Summit, R. 1.....		
Tipton, Tipton	February 22.....	D. F. Maish (22).
Pernal Blazer, Tipton.....	February 23.....	Mrs. V. C. Meredith.
Jay, Pennville.....	February 24.....	W. B. Flick (24).
S. K. Bell, Portland.....	February 25.....	Mrs. V. C. Meredith.
Marshall, Culver	February 20.....	E. C. Martindale.
David J. VanVactor, Plymouth.....		
St. Joe, Wyatt.....	February 21.....	E. C. Martindale.
E. A. Metzger, Granger.....		
St. Joe, New Carlisle.....	February 22.....	E. C. Martindale.
E. A. Metzger, Granger.....		
Dekalb, Corunna.....	February 23.....	E. C. Martindale.
H. M. Widney, St. Joe.....		
Dekalb, Butler.....	February 24.....	E. C. Martindale.
H. M. Widney, St. Joe.....		
Whitley, Columbia City	February 24.....	A. G. Burkhart.
N. F. Watson, Columbia City, R. 4.....	February 25.....	E. C. Martindale (25).
Parke	February 22.....	J. J. W. Billingsley.
Lewis Boyd, Rockville.....		
Parke	February 23.....	J. J. W. Billingsley.
Lewis Boyd, Rockville.....		
Benton, Otterbein	February 24.....	J. J. W. Billingsley.
J. A. Blasdel, Fowler, R. 2.....	February 25.....	Prof. W. C. Latta (25).
Gibson, Mt. Olympus	March 1.....	J. H. Gwaltney.
A. G. Holcomb, Ft. Branch.....		
Gibson, Somerville	March 2.....	J. H. Gwaltney.
A. G. Holcomb, Ft. Branch.....		
Crawford, Pilot Knob	March 4.....	J. H. Gwaltney.
Jno. H. Jenkins, Magnolia.....		

Place of Meeting and Chairman of Institute.	Date.	Assigned Speakers.
Jefferson, Canaan	March 1	J. A. Burton (1).
R. H. Wood, Madison, R. 4	March 2	L. A. Stockwell.
Switzerland, Moorefield	March 3	L. A. Stockwell.
Jno. P. Porter, Vevay.		
Jennings, Comiskey	March 3	D. B. Johnson.
Jno. E. Amick, Scipio.		
Sullivan, Carlisle	March 3	W. B. Flick (3).
Chas. Lawson, Staffordshire	March 4	J. B. Burris.
Clark, Prather	March 3	Mrs. L G Fitzpatrick (3).
W. P. Bottorff, Charlestown, R. 2	March 4	J. J. W. Billingsley.
Fulton, Akron	March 3	A. G. Burkhart.
Frank Montgomery, Rochester.		

Twelve of the meetings arranged for in the foregoing schedule failed to materialize through want of co-operation of the local authorities. A few meetings were postponed, and a few additional institutes were held, making a total of 226 meetings, as previously stated.

SUMMER INSTITUTES.

Thirty-one one-day Summer Institutes, especially for farmers' wives and children, were held in June and early July, 1905. Domestic Science, Household Conveniences, Poultry Raising, Diseases of Poultry, Juvenile Farming, Advantages of Farmers' Boys and Girls, Industrial Education and Education for Home Making were the topics most frequently discussed at these summer meetings.

The schedule of Summer Institutes is as follows:

SCHEDULE OF SUMMER FARMERS' INSTITUTES.

County, Place and Local Chairman.	Date.	Speakers.
Tipton, Tipton	Thursday, June 1	Miss M. M. Mather.
Mrs. W. L. Berryman, Tipton.		Prof. W. C. Latta.
Union, Liberty	Friday, June 2	Miss Mather.
Oliver Lafuze, Liberty.		G. W. Spitzer.
Wayne, near Centerville	Saturday, June 3	Miss Mather.
Walter McConaha, Centerville.		Prof. H. E. VanNorman.
Washington, Salem	Monday, June 5	Miss Mather.
Mrs. E. L. R. Elliott, Salem.		Mr. Spitzer.
COMMENCEMENT PURDUE UNIVERSITY	June 7.	
Cass, Logansport	Thursday, June 8 ..	Miss Mather.
Miss F. Little, Logansport.		Mr. Spitzer.
Allen, Ft. Wayne	Friday, June 9	Miss Mather.
Mrs. M. L. Brown, Ft. Wayne.		Mr. Spitzer.
Huntington, Huntington	Saturday, June 10 ...	Miss Mather.
B. F. Biliter, Huntington.		

County, Place and Local Chairman.	Date.	Speakers.
Warren, West Lebanon H. B. Flesher, West Lebanon.	Monday, June 12	Miss Mather. Mr. Spitzer.
Boone, Lebanon Mrs. M. B. Schenck, Lebanon.	Tuesday, June 13	Miss Mather. Mr. Spitzer.
Madison, near Anderson Herman Hughel, Anderson.	Wednesday, June 14 ..	Miss Mather. Mr. Spitzer.
Tippecanoe, Wea High School Bldg. S. W. Brady, Lafayette R 10.	Thursday, June 15 ...	Miss Mather. President Stone. Dr. Craig.
Rush, Rushville Mrs. L. B. Harris, Rushville, R. 11.	Friday, June 16	Miss Mather. Prof. Latta.
Hamilton, Sheridan J. P. Davis, Sheridan.	Saturday, June 17 ...	Miss Mather. Prof. Latta.
Benton, Boswell James Hooker, Talbot, R. R.	Monday, June 19	Miss Mather. Mr. Spitzer.
White Monticello Mrs. James Diekey, Monticello.	Tuesday, June 20	Miss Mather. Prof. Latta.
Jasper, Rensselaer Mrs. H. J. Dexter, Rensselaer.	Wednesday, June 21 ..	Miss Mather. Mr. Spitzer.
Lake, Crown Point Mrs. C. E. Black, Lowell.	Thursday, June 22 ...	Miss Mather. Prof. J. Troop.
Marshall, Plymouth Mrs. M. W. Ross, Teegarden.	Friday, June 23	Miss Mather. Prof. Latta.
Noble, La Otto P. J. Stanley, Albion.	Saturday, June 24 ...	Miss Mather. Mr. Spitzer.
Hamilton, Carmel E. H. Collins, Carmel.	Monday, June 26	Miss Mather. Prof. Latta.
Putnam, Bainbridge J. C. Bridges, Bainbridge.	Tuesday, June 27 ...	Miss Mather. Mr. Spitzer.
Parke, Rockville Mrs. Chas. Davis, Rockville.	Wednesday, June 28 ..	Miss Mather. Mr. Spitzer.
Vanderburgh, Stringtown W. C. Goldsmith, Evansville, R. 5.	Thursday, June 29 ...	Miss Mather. Mr. Spitzer.
Spencer, Rockport Mrs. Carroll Bridges, Rockport.	Friday, June 30	Miss Mather. Mr. Spitzer.
Gibson, Owensville Miss Matt Waters, Owensville.	Saturday, July 1	Miss Mather. Prof. Latta.
Carroll, Deer Creek Taylor Fouts, Camden.	Monday, July 10	Miss Mather. Mr. Spitzer.
Hancock, Greenfield E. C. Eartindale, Greenfield.	Tuesday, July 11	Miss Mather. Prof. Latta.
Jackson, Reddington Mrs. O. E. Carter, Seymour.	Wednesday, July 12 ..	Miss Mather. Prof. Latta.
Fountain, Stone Bluff Theo. Romine, Veedersburg.	Thursday, July 13 ...	Miss Mather. Pres. W. E. Stone.
Vigo, Honey Creek Grange Mrs. L. E. Rigney, TreH'te, R. 3.	Friday, July 14	Miss Mather. Dr. R. A. Craig.
Sullivan, Paxton Joseph Shepherd, Carlisle.	Saturday, July 15 ...	Miss Mather. Prof. Latta.

ATTENDANCE AT THE INSTITUTES.

The attendance at the early winter meetings was, in some cases, disappointing, owing to the lateness of the corn crop and wet weather in the late autumn. Throughout the latter half of November and early December the farmers felt the necessity of gathering corn whenever conditions were favorable, and this, necessarily, greatly reduced the attendance at many meetings in these months.

In the following table will be found the data as to number of meetings, number of sessions, attendance at the several meetings in 1904-05, and a comparison, by counties, of attendance for the two years—1903-04 and 1904-05.

TABLE SHOWING ATTENDANCE AT WINTER FARMERS' INSTITUTES.

County.	Place, 1904-1905.	Number of Sessions.	Number Present.	Attendance by Counties.	
				1904-05.	1903-04.
Allen.....	Ft. Wayne.....	5	174	1,045	922
	Huntertown.....	3	531		
	Monroeville.....	3	63		
Adams.....	Hoagland.....	3	277	551	230
	Decatur.....	5	305		
	Berne.....	2	246		
Bartholomew.....	Columbus.....	5	405	873	674
	Azalia.....	2	235		
	New Berne.....	2	234		
Benton.....	Wadena.....	2	66	559	130
	Boswell.....	2	93		
	Otterbein.....	2	400		
Blackford.....	Hartford City.....	4	338	338	375
Boone.....	Terhune.....	2	149	431	496
	Jamestown.....	5	89		
	Lebanon.....	5	193		
Brown.....	Needmore.....	3	199	340	128
	Nashville.....	4	150		
	Flora.....	5	575		
Carroll.....	Deer Creek.....	2	166	923	387
	Owasco.....	5	182		
	Walton.....	2	263		
Cass.....	Logansport.....	4	550	813	486
	New Washington.....	3	193		
	Otisco.....	2	120		
Clark.....	Prather.....	5	206	519	651
	Center Point.....	5	350		
	Bowling Green.....	5	150		
Clinton.....	Middle Fork.....	5	379	500	895
	Frankfort.....	5	950		
	English.....	5	179		
Crawford.....	Pilot Knob.....	5	283	412	421
	Washington.....	4	208		
	Elnora.....	4	365		
Dearborn.....	Ebenezer Church.....	5	250	573	537
	Manchester.....	5	213		
	Greensburg.....	5	95		
Decatur.....	St. Paul.....	2	36	131	550
	St. Joe Station.....	5	567		
	Corunna.....	3	471		
DeKalb.....	Butler.....	2	410	1,448	855
	Muncie.....	4	312		
	Yorktown.....	2	87		
Delaware.....				399	630

ATTENDANCE AT WINTER FARMERS' INSTITUTES—Continued.

County.	Place, 1904-1905.	Number of Sessions.	Number Present.	Attendance by Counties.	
				1901-05.	1903-04.
Dubois	Ireland	2	32		
	Ferdinand	3	152		
	Holland	3	136	320	506
Elkhart	Goshen	5	975		
	Nappanee	5	1,653	2,628	2,025
Fayette	Connersville	4	258		
	Falmouth	2	265	503	166
Floyd	Georgetown	5	276	276	194
Fountain	Covington	3	42		
	Kingman	3	370		
	Veedersburg	5	228	640	512
Franklin	Brookville	5	150		
	Fairfield	5	513	963	762
Fulton	Rochester	5	275		
	Kewanna	5	500		
	Akron	4	700	1,475	826
Gibson	Ft. Branch	5	600		
	Mt. Olympus	2	187		
	Somerville	3	254	1,041	1,155
Grant	Swayzec	5	581		
	Marion	5	900	1,481	776
Greene	Bloomfield	4	133		
	Lyons	5	207	340	129
Hamilton	Noblesville	5	238		
	Arcadia	3	301		
	Carmel	2	146	685	458
Hancock	Willow	2	130		
	Greenfield	5	646	785	802
Harrison	Elizabeth	3	128		
	Laconia	3	210		
	Crandall	3	375		
Hendricks	De Pauw	2	216	929	208
	Danville	4	198		
Henry	Pittsboro	5	425	623	126
	New Castle	5	1,450		
	Moorcreek	2	1,100	3,150	1,250
Howard	Middletown	2	600		
	Kokomo	5	442		
Huntington	Sycamore	5	475	917	512
	Huntington	2	194		
	Warren	3	119		
	Mt. Etna	2	37		
	Roanoke	2	132		
	Markle	2	345	827	1,190
Jackson	Brownstown	1	77		
	Seymour	5	288	365	367
Jasper	Remington	5	350		
	Ronselaer	6	550		
	Wheatfield	2	326	1,226	293
Jay	Portland	2	202		
	Pennville	1	325	527	290
Jefferson	Wirt	5	352		
	Tryon Church	5	333		
	Canaan	3	210	925	812
Jennings	Butterville	3	287		
	Scipio	4	276	685	260
Johnson	Comiskey	4	124		
	White River Township	5	88	738	1,285
Knox	Franklin	5	650		
	Freelandville	5	343		
	Onktown	6	445		
Kosciusko	Erichton	5	175	963	790
	North Webster	3	300		
	Montone	2	100		
	Warsaw	3	377	777	405

ATTENDANCE AT WINTER FARMERS' INSTITUTES—Continued.

County.	Place, 1904-1905.	Number of Sessions	Number Present.	Attendance by Counties.	
				1904 05.	1903-04.
Laporte	Westville	3	200		
	LaCrosse	3	175		
	Hanna	3	75		
Lake	Laporte	5	400	850	1,225
	Brunswick	5	54		
	Lowell	5	301		
	Crown Point	5	539		
	Leroy	5	137	1,031	1,275
Lagrange	Topeka	2	138		
	Lagrange	5	1,501	1,638	1,032
Lawrence	Mitchell	5	137		
	Heltonville	5	17	254	125
Madison	Alexandria	5	203		
	Anderson	5	1,113	1,316	892
Marion	Broad Ripple	5	264		
	West Newton	5	640	904	515
Marshall	Plymouth	5	440		
	Culver	5	353	793	874
Martin	Loogootee	5	108	108	145
Miami	Macy	5	288		
	Bunker Hill	5	275	563	782
Monroe	Bloomington	5	199		
	Harrodsburg	2	109	308	170
Montgomery	Crawfordsville	5	103		
	Waveland	3	242		
	Darlington	2	94		
	Ladoga	3	250	689	881
	Mooreville	5	619	619	627
Noble	Albion	3	325		
	Kendallville	3	42		
	La Otto	3	450		
	Wolf Lake	3	210	1,027	261
Newton	Mt. Ayr	5	57		
	Kentland	3	207	264	505
Ohio	Mt. Pleasant	5	183	183	132
Orange	Orleans	5	294		
	Bromer	5	382	676	370
Owen	Quincey	12	30		
	Freedom	12	61		
	Spencer	5	375	466	196
Parke	Rockville	4	840		
	Marshall	12	438		
	Rosedale	12	360	1,638	782
	Main	4	78		
Perry	Derby	5	376	454	432
	Winslow	4	290		
Pike	Algiers	2	130	420	476
	Valparaiso	5	267		
Porter	McCool	3	145	412	885
	Poseyville	6	468		
Posey	Mt. Vernon	5	660	1,128	1,092
	Winamac	5	102		
Putnam	Medaryville	5	251	353	494
	Cloverdale	5	459		
	Greencastle	5	600	1,050	706
Randolph	Modoc	2	51		
	Winchester	5	838		
	Parker	3	250	1,139	751
Ripley	Napoleon	5	310		
	Versailles	5	336	646	714
Rush	Manilla	5	450		
	Carthage	4	600		
	Rushville	5	892	1,942	890
Scott	Lexington	3	154		
	Scottsburg	5	200	354	219

ATTENDANCE AT WINTER FARMERS' INSTITUTES—Continued.

County.	Place, 1904-1905.	Number of Sessions.	Number Present.	Attendance by Counties.	
				1904-05.	1903-04.
Shelby.....	Boggs town.....	2	45		
	Flat Rock.....	2	40		
Spencer.....	Shelbyville.....	5	703	788	763
	Rockport.....	5	648		
Starke.....	Chrisney.....	5	462	1,110	1,191
	North Judson.....	3	104		
Steuben.....	Knox.....	3	57	161	269
	Angola.....	3	494		
Sullivan.....	Hamilton.....	3	650	1,144	850
	Fairbanks.....	3	206		
St. Joseph.....	Carlisle.....	3	492	698	151
	South Bend.....	3	2,050		
Switzerland.....	Wyatt.....	3	425		
	New Carlisle.....	3	725	3,200	2,007
Tippecanoe.....	Vevay.....	3	289		
	Moorefield.....	3	300	589	547
Tipton.....	Dayton.....	3	300		
	Lafayette.....	3	200		
Union.....	Romney.....	2	27		
	Montmorenci.....	2	157	684	953
Vanderburgh.....	Tipton.....	5	1,875	1,875	1,288
	Liberty.....	5	699	699	1,007
Vermillion.....	McCutchanville.....	5	563		
	St. Joe.....	3	160	723	363
Vigo.....	Dana.....	5	235	235	575
	Honey Creek Grange.....	4	150		
Washington.....	Terre Haute.....	4	168	318	65
	Little York.....	2	27		
Washington.....	Kossuth.....	2	86		
	Pekin.....	2	103		
Washington.....	Campbellsburg.....	4	81	297	595
	Lafontaine.....	2	143		
Wabash.....	North Manchester.....	2	438		
	Roann.....	2	232		
Wabash.....	Wabash.....	2	214	1,027	178
	West Lebanon.....	2	376		
Warren.....	Pine Village.....	2	237		
	State Line.....	2	110	723	884
Warrick.....	Yanketown.....	5	158		
	Boonville.....	4	121	279	380
Wayne.....	Cambridge City.....	2	400		
	Green's Fork.....	5	500	900	700
Wells.....	Ossian.....	3	100		
	Keystone.....	2	131		
Wells.....	Bluffton.....	5	329	560	677
	Chalmers.....	1	15		
White.....	Monon.....	3	134		
	Burnett's Creek.....	5	503		
White.....	Monticello.....	5	375	1,027	484
	Churubusco.....	3	175		
Whitley.....	Columbia City.....	5	594	769	1,024
	Total.....	226	74,467	74,467	59,189

From examination of the table, it appears that fifty-five counties show an increased attendance, and thirty-seven counties a decreased attendance in 1904-05 as compared with the previous year.

The average attendance in 1904-5 was 329+, being nine less than in the previous year.

The aggregate attendance at the winter meetings 1904-05, shown above, was 15,278 greater than in any previous year.

TABLE SHOWING ATTENDANCE AT THE SUMMER INSTITUTES.

COUNTY.	PLACE.	No. Sessions.	No. Present.
Allen.....	Ft. Wayne.....	2	128
Benton.....	Boswell.....	2	22
Boone.....	Lebanon.....	2	81
Carroll.....	Deer Creek.....	2	159
Cass.....	Logansport.....	2	164
Fountain.....	Stone Bluff.....	2	154
Gibson.....	Owensville.....	2	178
Hamilton.....	Sheridan.....	2	184
Hamilton.....	Mt. Carmel.....	2	28
Hancock.....	Greenfield.....	2	186
Huntington.....	Huntington.....	2	88
Jackson.....	Reddington.....	2	337
Jasper.....	Rensselaer.....	2	180
Lake.....	Crown Point.....	2	64
Madison.....	Anderson.....	2	345
Marshall.....	Plymouth.....	2	205
Noble.....	LaOtto.....	2	137
Parke.....	Rockville.....	2	167
Putnam.....	Bainbridge.....	2	200
Rush.....	Rushville.....	2	262
Spencer.....	Rockport.....	2	204
Sullivan.....	Paxton.....	2	303
Tippecanoe.....	Wea.....	2	135
Tipton.....	Tipton.....	2	279
Union.....	Liberty.....	2	143
Vanderburgh.....	Stringtown.....	2	203
Vigo.....	Honey Creek Grange.....	2	94
Warren.....	West Lebanon.....	2	75
Washington.....	Salem.....	2	236
Wayne.....	Centerville.....	2	233
White.....	Monticello.....	2	372
Total.....		62	5,497

The local officers were allowed no State funds for advertising the summer meetings, and many of the local chairmen were without experience in arranging for and conducting Institutes. In view of these facts, and the rush of work when the meetings were being held, the attendance was very gratifying in many cases.

Although farmers attended all of the meetings, the farmers' wives and children largely predominated in the audiences, as was expected. From three-fourths to nine-tenths of those in attendance were women and children, and from 10 to 50 per cent. of those in attendance were boys and girls, and young folks under twenty.

In nearly all cases the interest was exceptional, showing that the people are ready and eager for information pertaining to home sanitation, household management, training of children and the care of poultry.

SUMMARY OF ATTENDANCE AT INSTITUTES.

Winter Institutes, 226; average 329+; aggregate, 74,467.

Summer Institutes, 31; average, 177+; aggregate, 5,497.

Summer and Winter Institutes, 257; average, 311; aggregate, 79,964.

In making up the foregoing tables of attendance, the reports of the

secretaries and speakers have been consulted, and their averages taken, except in a few instances where one report or the other was, evidently, in error.

In calculating the approximate number of different persons in attendance at each meeting the method adopted by the American Farmers' Institute Workers' Association was followed, that is, the number present at the largest session is increased by one-half the number attending the next largest session. This is, of course, not strictly accurate, but has been found to be approximately correct.

DISBURSEMENTS OF THE STATE INSTITUTE FUND.

The following classified statement gives the disbursements of the State Institute fund for Farmers' Institutes, from November 1, 1904, to June 30, 1905:

Expense of 226 Winter Institutes.....	\$6,301 01
Partial expense of 31 Summer Institutes.....	289 96
Salary of Superintendent.....	666 67
Clerical work	461 64
Printing, stationery and postage.....	297 00
Supplies, including typewriting machine.....	77 40
Miscellaneous expenses, freight, express, telegrams, etc.	31 34
Unexpended balance, June 30, 1905.....	1,874 98
Total.....	<hr/> \$10,000 60

The unexpended balance, \$1,874.98, will be used to complete the series of Summer Institutes, provide for the Annual Conference of Institute Workers in 1904-05, and defray the expenses of the Superintendent's office for the rest of the year ending October 31, 1905.

PLANS FOR THE COMING SEASON—1905-06.

Plans for the coming year were begun by sending out, early in March, a circular letter to the County Institute chairmen, requesting them to indicate the places and dates desired for the meetings in their respective counties, and the subjects to be presented. With very few exceptions, the blanks sent in were properly filled out, and are now in the Superintendent's office in readiness for making up the schedule of meetings for 1905-06.

The subjects suggested to the county chairmen, from which they were expected to make selections for their respective meetings, are as follows:

(1) The Soil, (2) Grain Crops, (3) Leguminous Crops, (4) Other Forage Crops, (5) Pastures, (6) Stable and Green Manures, (7) Commercial Fer-

tilizers, (8) Horses, (9) Cattle, (10) Hogs, (11) Sheep, (12) Poultry, (13) Bees, (14) Principles of Breeding, (15) Principles of Feeding, (16) Fitting and Marketing Live Stock, (17) The Farm Dairy, (18) The Creamery, (19) Silage for Dairy Stock, (20) Silage for Butcher Stock, (21) Producing Fine Dairy Products, (22) Orchard Fruits, (23) Small Fruits, (24) The Kitchen Garden, (25) Market Gardening, (26) Forestry, (27) Bird Protection, (28) Farm Accounts, (29) Farm Arrangement, (30) Farm Buildings, (31) Highway Improvement, (32) Domestic Science, (33) Sanitary Homes, (34) Agricultural Education, (35) Agriculture in the Country Schools, (36) Rural School Improvement.

During the coming year the number of meetings to be held in the various counties will be in direct ratio to the area. Counties having an area less than 200 square miles will have but two days of Institute work. Those having 200 to 350 square miles will have three days of Institute work. Counties having over 350 and under 500 square miles will have four days of Institute work, while the counties containing 500 or more square miles will be entitled to five days of Institute work. Judging from the replies in the Superintendent's office, every county will, probably, have its full quota of Institute work the coming year.

CORN GROWING.

JAMES BOONE, CARLISLE, IND.

[Read before the Sullivan County Farmers' Institute.]

It is possible within a few years to double the average production of corn per acre in the United States and to accomplish it without any increase in work or expense.

It is not to be understood from this statement that it is desirable to double the present corn crop, but that it is desirable to produce the same yield on a smaller number of acres and with less labor. If 60 bushels are raised on one acre instead of on two, the labor of plowing, harrowing, planting, cultivating and harvesting is greatly reduced. The demands control the quantity that should be grown.

To meet the demands the producers of the United States have during previous to 1904 averaged in round numbers 2,000,000,000 bushels of corn yearly. In producing this a little more than 82,000,000 acres have yearly been devoted to corn growing. The average yield per acre has been 24.5 bushels. Very few farmers would like to acknowledge that their average production for the past ten years has been less than 25 bushels per acre but from the best estimates that have been made the conclusion is un

avoidable, that half of those who grow corn harvested less than 25 bushels per acre. Twice this quantity is a fair crop, three times 25 is a good crop, and four times 25 bushels per acre is frequently produced. We find that there are 3,488 hills of corn on one acre and two stalks to the hill would be 6,976 stalks. An ear would have to weigh five and one-half ounces to yield 34 bushels per acre. An ear that would weigh one pound each would make 100 bushels of corn per acre. A five and one-half-ounce ear is but a nubbin, but we do not realize how many stalks have no ear at all. Therefore, we should be very careful in selecting our seed corn. In gathering your corn for seed you should go in your field just after the corn has matured if you have no seed plot and gather your seed corn for the next year. Gather the perfect ears and see that there are no barren stalks close to have fertilized this ear.

As to the method of drying it, you should have a good building with plenty of air and light and a good roof. Take and drive nails through an inch board, then turn this board over and arrange as shelves. Stick the ears on the nails so that they will not touch each other. This will let the air circulate around the ears and cause them to dry nicely. We should test every ear we plant in this or some other manner. Number your ears as they stand on the board. Take a shallow pan that has got some moist soil in it, then take a piece of thin board or a piece of tin and make some small holes in them. Place this on the soil and then number the holes and take ear number one and put three or four grains in hole number one, and so on. Then put a damp cloth over this and put in a warm place, wait about one week or ten days till corn has sprouted. If there are any that did not sprout you will know the ear by the number on your board or tin that the grains are put in. Then you can discard it, and should any not grow thrifty discard it also. In this way you can help to improve your corn as well as the yield. You should test every ear you plant, for no man can tell the germination power of an ear by looking at it. You should nub each ear you plant. Every corn grower should grow his seed corn in a plot and select his seed corn from this for the next year. You should plant each ear to itself in a row or rows in your seed plot and select from the rows that come up quickly and grow off rapidly, and pull tassels from the rows that don't grow off thrifty, for as we know the tassels make the pollination for the corn. The opportunity for the improvement of the soil offers a wide and inviting field of effort to the intelligent and progressive farmer. While the methods to be adopted vary with the character and condition of the soil and climatic conditions and the use that is to be made of the land. There are 3,000 tons of atmospheric nitrogen resting on every acre of land a certain quantity of which can be transformed into available plant food every time that we grow a crop of cow peas or red clover. This is one of nature's ways of fertilizing the soil. Therefore, we should help

nature in improving the soil by growing and plowing under leguminous plants which will fill the ground full of humous which will loosen the soil. Therefore, I should prefer a clover sod for corn. First take and disk the soil good, so as to cut up all vegetation and to preserve moisture. Plow in spring when ground is dry. As to time, according to amount to be plowed. If small crop and plenty of labor wait a little later in the spring than if you had a large crop and less labor. Plow six inches deep and always use jointer. Always keep the plowed ground harrowed up with the breaking, to save moisture. In preparing the seed bed put plenty of time on it, for here is where we can greatly benefit our corn crop. Get it as fine as possible, which will aid in holding moisture as well as making more plant food available. As soon as the ground is warm enough in the spring, drill your corn from 14 to 16 inches, according to the soil and seed. Plant in furrow as deep as possible not to molest the trash you turned under, for instance, about half way in the seed bed. Then cover the corn from one to three inches deep according to soil and moisture, generally about one and one-half inches deep. If it rains before corn comes up, harrow or use weeder the same way the rows run and roll in a little dirt so as to get rid of the crust; this will also help hold moisture and make crust soft so corn can come up easy. When corn comes up use harrow or weeder same way rows run, and be careful not to fill the harrow very fast. Cultivate shallow with small shovels if the ground is full of humerous; if not, use large shovel and plow deep for the first time or so. Then plow shallow, as the roots are getting near the surface, and keep the ground level and fine on top so as to make a blanket to preserve moisture. After corn gets past plowing with a cultivator should a rain come and the wind does not blow the corn down you should break the crust and form a mulch about two inches deep to hold the moisture. Use a small-toothed cultivator. How many times the corn is to be plowed is according to the season. It should be cultivated often enough to keep the weeds down and maintain the mulch to hold the moisture. Should a heavy soaking rain come, we should plow deep to loosen the soil and dry it out, as a hard soil will not hold moisture, but this cultivation should be followed up as soon as the soil is dried a little with a shallow cultivator. It is all a mistake about plowing to hold moisture when it is dry weather, if you have the proper mulch. Of course we should cultivate enough to keep the weeds down. Should you allow your ground to pack and brake so that it will plow up in large clods when you attempt to cultivate it it will do the crop more injury to cultivate this ground than to leave it alone.

Now, brother farmers, there are three things within our power if we own the land: First, to have good soil; second, to have good seed; third, to give proper cultivation.

POULTRY.

MRS. JEFFERSON RAY, ROCKPORT.

[Read before the Spencer County Farmers' Institute.]

My paper may not fit the topic assigned me very well, as I did not know exactly what it was. I suppose so it is about "chickens" it will be all right. The poultry question is one which interests most all farmers and their wives—fanciers and cranks. You may bring together any number of farmers or farmers' wives and it will not be long until the chicken question will receive due consideration. Many questions will be asked and answered and notes compared. Is it any wonder when we realize the increased magnitude of this industry?

The time of year is on when we may begin our work for next year; and in what way could we do this in a better manner than to study our work, make our plans, profit by our past experiences and learn new and better methods by attending the Farmers' Institute?

The State, realizing our needs, is ever ready to give us all help in her power to make us better citizens by making us prosperous and happy; in other words, by educating us up to the best standard of citizenship, hence she sends to us such men as we have with us today instructing us in this business of poultry raising, together with other branches that may prove of benefit to us in our daily vocation in life. These gentlemen come to us prepared to give the best thoughts and perhaps more advanced ideas than most of "we" farmer people have been in a position to gain otherwise. To show our appreciation note the number present and the interest taken. While we are, or at least the most of us, interested in poultry raising, we do not consider that we get out of it all the profit there is possible for us to get, nor do we consider our methods above the average.

My experience has not extended over more than twenty years. The earlier part of that time I gave the poultry only such of my time and thought as was necessary to supply our own table. It is only the past two years that I have kept a record.

The question comes to us naturally which is the better plan? To hatch our chickens in the natural way or by use of the incubator? I have tried the latter way for only two years and can not say that I have had perfect success. But you well know how loth we are to parade our failures, rather would we talk of our successes. Now I realize that while I am to some extent acquainted with my machine (which is a Victor), I have many things to learn concerning its successful operation. Nevertheless I am very much in favor of hatching chickens by use of the incubator. First, because you can keep the hens laying; second, because

the little chicks are turned out of the machine free from vermin. Then you can save so much time and strength in caring for the machine. I operate my machine in a small room leading from the kitchen, which had been originally intended for a bath room. Here in twenty minutes in the morning and less time at night I attend to filling and trimming the lamp, turning and airing the eggs, etc. The brooding of the same number of eggs would require the time and attention of 14 hens, and you all know something of the time it might require should some of that number be inclined to fight or change their minds in regard to setting, etc. Another feature yet, the whole 14 hens would be out of the laying business (which we consider so profitable) for say eight weeks at least.

One of my troubles has been infertile eggs; another to know just the right amount of moisture. Following the instructions given with the machine very closely, yet I find many chicks in eggs that pip but never get out. I find the Plymouth Rock eggs very hard shelled and often the egg will pip but the lining membrane being so tough it does not yield and the chick dies in the shell.

Now it is to learn how to overcome these things that I am here, and to gain any other useful knowledge that I may. I do believe that the time we spend in farmers' institute is well and profitably spent. A few years ago I spent one day at institute at Chrisney and listened to Mr. Todd talk on poultry. He told us how to avoid bowel trouble with young chicks, which proves so fatal sometimes. This to me was a valuable lesson. Now just before my incubator hatches I put a large bake pan full of clean sand in the range oven and heat it and cover the floor of the brooder with it. On this sand the chicks are placed and here they get their first meal together with the necessary grit to digest it. I wish to speak of one mistake I made in selecting a brooder. It might save some one else the same. When I bought my machine I bought a brooder, for which I paid \$11, and as a brooder it was worth about that many cents. It sent the heat up from beneath the chicks, and that is not nature's way of warming them up. You see I "didn't think," and that costs us a lot of trouble sometimes. While we may use artificial means we must work in accord with nature. The old hen hoovers her chicks and warms their backs, where many of the nerve centers are, and they are healthy and happy thereby. This mistake necessitated the purchase of a brooder this year, and I have a daisy, works like a charm. It has a tank of water overhead heated by a lamp; hoovers hang from top of machine on both sides of the tank, there is plenty of space outside the hoovers if they find it too warm within.

In my own case I look to the sale of eggs for my profit rather than the chicken sale. This year, however, my flock was invaded by disease, such as roup, limber neck and cholera, which cut quite a figure in the profits. At the beginning of the present year I had about fifteen dozen hens. From January 1 until November 1 we gathered 955 dozen eggs and

sold of that number 706 dozen, which realized us \$106.60. Now I consider this clear profit, and when the head of the firm inquires where the pay comes from for feed I point him to the fact that something over 100 chickens have been used on the table, and while I can not give the exact number of eggs used, if we take the difference between those gathered and sold we find it to be 249 dozen; this, of course, includes what were set, but still leaves a goodly number for use. So we feel like we have paid a very good price for our chicken feed.

MONEY IN POULTRY.

MRS. CHARLES DAVIS, ROCKVILLE, IND.

[Read before the Parke County Farmers' Institute.]

The value of the poultry industry is best comprehended when it is compared with some other farm product. The government statistics place the annual sale of eggs and dressed poultry in the United States next to cotton and wheat. The industry is growing, too. Farmers, from whom the greater per cent. of poultry supplies come, are beginning to realize what profits can be made if poultry receive as much care in proportion as other stock, so they are giving them better care in the way of housing and feeding.

It is a common thing now to see flocks of standard-bred poultry which have been selected with some definite end in view. These fowls are doubly valued because the choicest specimens can be easily disposed of as breeders at fancy prices, and eggs for hatching in season command more than market price; while the remainder make good market stuff.

There are several phases of the poultry industry, and one can now choose from past records that breed which is best suited to their purpose, themselves, and their surroundings. After a selection has been made stick to it. A fortune is not made in one or two years. It is the man who has the perseverance who attains success. If eggs alone are desired, the Mediterranean strains (Leghorns, Minorcas and Spanish) are the acknowledged leaders.

If you wish fowls for meat and table use, the Asiatic breeds (Brahma, Cochin and Langshan) have the largest dressed carcass. These, however, are more profitable as matured fowls because the young chickens are growing the frame which must support such weights and are apt to be leggy and gaunt until past the broiler age.

If a general purpose fowl is desired the American breeds (Plymouth, Wyandottes and Javas) are about as good as can be found. These are but a couple of pounds lighter than the Asiatics, while their egg records compare very favorably with the Mediterranean breeds. An Eastern egg

farmer made a yearly average of 196 eggs from a flock of 600 White Leghorns, while his neighbor made a yearly average of 194 eggs from a flock of 140 Barred Plymouth Rock hens. The latter flock, being smaller than the former, the average could not be said to be equal, but the comparison shows what is possible with the American breeds. The common egg record for a pullet is 120, but breeders are striving for the 200-egg hen, and I expect she will soon be produced.

The Utah experiment station claims that a two-year-old hen lays but half the number of eggs a pullet does and a three-year-old hen one-third. So it stands to reason that a flock of old hens is not a paying investment.

To obtain the high-priced winter eggs it is necessary to prepare for it the spring before. Pullets should be hatched early enough to begin laying before cold weather sets in, otherwise they will not lay before the last of January or February.

As to the feeding: The greater variety the better. Wheat, oats, corn (not in excess), sunflower seed and millet (sparingly) are all grains which can be raised on the farm and these fed in a litter (so as to induce exercise) will keep the hens scratching, and hence healthy and in good laying condition. Nearly all authorities recommend a warm mash once a day, but differ on the time it is to be fed. The mash is composed of moistened ground grain, table scraps, parings (cooked preferred), with some animal food of some kind, such as blood meal, meat meal, tankage, or green cut bone or beef scraps if you are near enough to the market to feed while fresh. These contain in a very large per cent. the protein which is so necessary for egg production. These are better than condition powders, for they keep the fowls healthy and produce eggs without stimulants. The fowls must have an abundant ration during egg laying, in fact, "must be fed to the maximum."

The house must be comfortable and free from drafts. They can easily be made so by stripping, with double walls or lining with tarred paper, and the expense will soon be repaid and good interest given in the number of extra eggs produced. Then there should be windows to let in the sunlight and give the chickens a chance to find every grain in the litter. Clean water, grit, charcoal and dust baths are self-evident necessities, so we do not dwell on them.

A good profit can be obtained by combining the egg and broiler business. Broilers to be choice should be rushed almost from the time they leave the shell until they are on the market. The ancestry of the fowl is of importance then, so that the broiler may have by inheritance a strong constitution which can assimilate food readily and respond quickly in growth.

Form is of next importance. We want a chicken which will be attractive when dressed. It should be full, deep-breasted, broad back, short, thick thighs and strong legs, yellow preferred, as that usually bespeaks a yellow skin, though the latter is often obtained from grass runs. If we

wish to cater to the most exacting market, white plumage is required, because the fowl is killed when growing feathers and the white pin feathers show the least in a dressed fowl. To be sure of all these points it is best to obtain the eggs from which the broilers are to be hatched from one's own flock. There can be no uniformity in a bunch of broilers of different varieties and it is of advantage to place all on the market at one time. The broiler market opens in February and extends into "young chicken" times, but the price steadily decreases. Therefore the quicker the fowl can be prepared for market, the better the price and profit. Ground feed produces one pound gain at a less cost than whole grain. Concentrated protein food adds materially to the growth, general health and causes more food to be assimilated. One pound of 60 per cent. tankage has a feeding value of three gallons of skimmed milk and averages not quite 2 cents per pound. Linseed meal (though not so rich in protein) and blood meal will also hasten the growth. A bunch of broilers was fed chiefly on ground feed with linseed meal in a mash and in 11½ weeks they averaged 2½ pounds. The next year during the same month a bunch of broilers was fed the same ration with tankage in place of linseed meal and in 11 weeks they averaged 2½ pounds. As the estimated cost of raising a broiler is 25 cents per head and the market price then 20 cents per pound, there was a profit of 25 cents per chicken.

There is no doubt that there is money in poultry or the industry would not be developing so rapidly. Farmers can surely make money out of poultry since they raise nearly all their own feed and the fowls have free range of the farm and can pick up a good deal of their own living.

HOME AND FARM SANITATION.

MISS CLARA WHIPPS, CARLISLE, IND.

[Read before the Sullivan County Farmers' Institute.]

This is a subject which is of extreme interest and importance to each and all. The greatest influence upon health is exerted by those things which we most freely and frequently require for our existence, and this is especially true of water and air.

In the sanitation of the home, the first thing of importance is the location of the house on the farm. It should be on the highest elevation of the ground, so that all refuse and filth can be carried away from the house, either by natural or artificial drainage. It is possible, of course, to secure drainage in towns and cities where systems of sewerage and water works have been introduced without recourse to marked elevation, but in villages and country districts not so favored it is absolutely of the greatest importance. Take for instance the ordinary farm residence.

where slops, dish water, etc., are usually thrown out at one place at no great distance from the buildings. This may possibly prove no menace to health during the winter months, particularly in northern latitudes. But the same can not be said of the summer. The hot sun is certain to have such an effect on these places that the air becomes poisoned, and poisoned air, as all physicians know, makes possible the life of the bacteria and germs responsible for nearly all the most dreaded of our infectious diseases. It is best not to throw slops on the ground at all, for they can be more profitably used, either fed to the poultry or pigs. Another reason is that it places the home in a dryer atmosphere above the heavy damp stratas of air that are found on the lower land. Nearly every one has noticed a fog over these low parts early in the morning during different seasons of the year, which has a tendency to cause chills and other diseases.

It is also very important to ventilate the house thoroughly, as noxious exhalations and organic vapors of various kinds collect in every occupied house. They may be harmless at first, but in time become subject to decomposition, and are then decidedly hurtful, although their presence may not be detected at all. Open your house every day if possible, so that a strong current of air may sweep through it. The living room is better on the southeast side of the house, so as to receive plenty of sunlight. There should be transoms over all the doors and plenty of windows, so that a sufficient amount of pure air can be admitted. It is very unhealthy to sleep in a closely shut up room without a circulation of fresh air. Good sanitation requires painted walls, well seasoned woodwork with all cracks puttied up, and painted floors, laid close and not requiring carpeting; furniture without upholstering, that may gather dirt, germs, etc. Caution should be taken against sweeping in such a manner as to stir up disease-breeding germs. Damp brooms, damp floors and as little agitation as possible, combined with the use of a damp dust cloth, would reduce this to a minimum.

A great many people think that any out-of-the-way place will do for a bathroom, where it is dark and badly ventilated. But this room should be as light, clean and well ventilated as any other room in the house. The closets are often repositories for old mops, rags, dirt, etc., but it should be the rule of every housekeeper to keep the closets clean and pure, so that they will not be the hiding place of many loitering germs.

Cellars are best built elsewhere than under the house, because of dampness affecting the entire house, bad odors and germs of decaying vegetables and other objectionable reasons. But where situated under the house care should be taken to thoroughly ventilate it. Failure to give this part of the house the same attention as the living rooms is a fruitful source of disease. Nothing is more conducive to bad health than a wet, clammy and poorly ventilated cellar. If you are to build a new house make the ventilation and drainage of your cellar an important considera-

tion. The money spent in having it right you can rest assured will be well spent. The best ventilation is by use of a chimney starting from the ground and built larger than is customary in many places. It should be at least 20x12 inches inside the flue, with a small register at the bottom. There is no better ventilation made than the old-fashioned fireplace, and one should be in every cellar. In the spring everything likely to decay should be taken out, all the windows opened, and the whole cellar, walls and ceiling given a good coat of lime whitewash.

Since so much depends on the health of the family from the water supply, we can see the necessity of having the yard surrounding the well kept neat and clean. It has been demonstrated that the well can be contaminated by leaching whatever may be on the surface within a radius of 40 feet. For this reason it can be easily seen that poultry yards, barn lots and all out-buildings should be adjusted at a sufficient distance from the well and house. The up-to-date well is cemented, so that no surface water can get in. As an illustration of the pollution of water, take for instance the epidemic of typhoid fever at Butler, Pa. On December 5th 1,180 cases were reported to the board of health, due to the infection of the water supply. The water was pumped directly from a creek, when there were many cases of typhoid fever on the tributaries of the stream. At Springdale, a part of Butler, only two cases were reported, one a child who had been going to school at Butler and the other a laborer at the same city. The population at this town obtained its water from a number of artesian wells and was not provided with the water of the main city. But very few realize the bad effects of open rain barrels during the warm season of the year in the breeding of mosquitoes, which are the direct cause of malarial sickness. It can be easily obviated by the use of a little coal oil poured in the barrel.

For the welfare of our animals, cattle and horses, especially the barns and stables should have plenty of light admitted to the rear of the animals. Provision should also be made for abundant fresh air. Air which contains 10 to 12 per cent. of carbon dioxide will no longer sustain life. The deleterious effect is due partly to the lack of oxygen in such a re-breathed air, but also to the excess of the poisonous carbon dioxide, volatile organic matter and other injurious products. Air which contains even 1 per cent. of carbon dioxide produced by breathing is injurious to a marked degree. In a perfectly close place where there can be no access of fresh air a horse would contaminate to this extent over 7,000 cubic feet in 24 hours. The dairy department is another very important factor in the health of the family. Impure milk is equal to water in the breeding of germs. How can you expect clean, pure milk when your cow is allowed to eat any kind of green feed dumped into a filthy barnyard or to drink from a stagnant pond? Many yards into which dairy cows are turned each day for their drink and exercise are knee deep with mud.

during the winter and spring, if not nearly the entire year. No swine pen should be nearer than 200 feet, on account of the odors from it being readily absorbed by milk.

For the general sanitation of the land there should be either natural or artificial drainage. All dead animals or poultry should be buried or burned and not left lying around on the farm.

Since our knowledge of the nature of infectious diseases has been more and more defined scientific methods for their prevention have been applied. We have learned, too, that in addition to the germ there must be a suitable soil for its proliferation, and that sanitation will not only destroy the environments for its development without the body but also place the system in the best possible condition to resist its toxic action. Progress has crowned our past. We will not retrograde. Let us hand in hand with heart and mind join in promoting the welfare of American sanitation until it has reached the proudest pinnacle in the world of science, until she has become the fountain head of knowledge for the benefit of mankind.

SAVING STRENGTH.

MRS. JOSEPH T. MOORE, MONTICELLO, IND.

[Read before the White County Summer Institute.]

Although the life of the farmer's wife has many advantages, it also has its disadvantages. Perhaps her greatest advantage is her great freedom. Instead of having to be content with a fraction of an acre for a home and all its luxuries and accommodations, as her city sister is, she has the freedom of from forty to hundreds of acres.

This seemingly great advantage is, unquestionably, her greatest disadvantage. If it is more convenient to unload the fuel ten or fifteen rods from the house, or to save the expense of two wells or piping water to the barn, to place one well half way between the house and barn, and to have the chicken park and garden likewise as unsuitably located, it requires her, in doing the necessary work of a day, to travel many unnecessary miles. It is not so much the amount of work she has to do, but the inconvenient location of the things with which she works.

Much of this great disadvantage is the fault of the husband. But let us look in the house, her home, and should be her throne—how is it arranged?

If you ever had occasion to examine a set of plans for a dwelling house prepared by a professional architect, you surely were impressed by the great amount of careful thought given to every little detail of the building, just where every cupboard should be and where every window

should be placed, so as to accommodate certain pieces of furniture. Do you think farmers give equal attention to all these little items when building a house, or do they build in a certain form because it is the custom to build so? The real comfort one takes in a house is due to the careful planning of items that save strength more than to the color of the house or the number of rooms it contains. If careful attention can be given to the planning of but one room in the house, that should be the kitchen. Did you ever know a woman who takes five steps going and coming to a certain cupboard when she might easily move the cupboard where it would require only four steps?

Pardon me if I give you a little personal experience. Some time ago I realized that the arrangement of my kitchen was not saving me steps as it should. One rainy day my husband and I rearranged it as conveniently as we could plan. By a little calculation I found that in the task of baking four pies the new arrangement saved me 330 steps, or 10 rods.

A woman spends 365 days getting meals and the other work necessary in her home, only to realize that the members of her household are still as hungry as they have been, and that they will be hungry every day of the next year. Her work has become routine; yet she is conscious that, unless this same round of labor and each little duty are carefully performed, there will be a serious interruption to the success and happiness of her home. Dull routine may be drudgery, but intelligent interest adds pleasure. The conversion of housework from drudgery into a pleasant occupation depends, first, upon the mental attitude toward it; second, upon making every detail a matter of special attention; third, upon the effort to put forth in any task only just enough force to accomplish it. The intelligent worker finds pleasure in her effort to save time and strength and her reward, in a large degree, is the pleasure to her family and herself.

One thing is certain, when a woman has crowded forty-eight hours of work into twenty-four, and still finds the windows not washed, nor the sewing touched, to say nothing of being able to find time to read or to return calls, she must study what she can best leave undone and what things she must do with the least expenditure of time and strength. She should plan each day's work. Perhaps giving five minutes to planning a piece of work may save the equivalent of an hour at the end. Do we sometimes go on and on with a weary routine just because our mothers did, or we have followed it so long we have ceased to think about it?

But we must not think our work the only thing to consider. To suggest to women who, in their daily occupation, are usually "on the go," some, not only from sunrise to sunset, but several hours more, that physical culture would be a good thing for them seems, at first, altogether absurd. I can almost hear the busy, energetic woman say: "Physical culture! What nonsense! I have exercise enough in my work." The

tired, weary, overworked woman sighs: "Don't talk to me of more exercise. What I want is a chance to rest." Such reasoning is reasonable, but I do not mean an increase of the same kind of exercise necessary to perform the daily work. The farmer and wife often need some kind of physical exercise to correct the physical faults of the daily work. The prevalence of worn, crooked and prematurely old men and women on the farms is proof enough that physical betterment is needed. Is the country producing as good physical men and women as the towns and cities are?

Doubtless some overworked woman thinks it no use to talk to her of this even if it is a good thing, because she has so much to do she has no time to learn anything.

If an old, worn-out stove burns twice as much wood and gives out two-thirds as much heat as a new stove would, it is a saving of money to spend it for a new stove. Likewise if in using the body in an incorrect way more nervous energy is consumed and less work accomplished than by using it correctly, surely it is a saving of time to take time to learn how to use the body more economically. The actual amount of work can not be lessened, but it is true that practical physical culture will enable women to lessen the fatigue attendant on their work.

How many of us realize how much our health, strength and endurance, how much ease in work and youthfulness of figure depend upon the backbone?

When in its natural position, this wonderful twenty-four jointed bone forms a double curve. Upon the maintenance of this double curve depends the attitude of the body as a whole and the correct position of all the vital organs. It is the right line for the backbone always to keep when the body is simply erect, either when standing or sitting, but it is also true that deviations from this true line are continually occurring during the numerous movements of the body. The adjustability of the spine to the movement desired is of great service to us in the use of our bodies, but we must be sure to bring the spine back to its natural position after every act that causes it to bend or twist. The failure to do this is one of the chief causes of the aging of the body, of undue fatigue from work and of the "ills that flesh is not heir to."

It is a very bad position when persons stand or sit with the back bowed out in a single curve and the muscles of the chest collapsed. Such positions as collapse the chest disastrously interfere with the three vital functions of life—respiration, circulation and digestion. A full, deep breath is impossible. Pressure on the veins and arteries caused by the sagging of the heavy upper trunk impedes the circulation, while the stomach is literally crowded out of house and home. Another bad position, also common, is where the upper part of the trunk is thrust too far back and the lower part too far forward.

These unnatural positions cause backache, heaviness of movement, unnecessary fatigue, nervousness and other serious troubles. In a good standing position a line extending vertically upward from the toetips would not touch the body below the chest. Now all muscles are firm, the vital organs well-supported, the greatest weight over the balls of the feet, the chest high and active, the shoulders flattened. All muscles are free from strain and no cramping, crowding, or sagging will be found.

All movements should be made with the least expenditure of nervous energy and the least interference with vital functions. Nature's bending places are the hip-joints and the knees. In standing at a table to wash dishes, etc., it is important to keep the head and chest well up and in order not to have some undue strain, even when one bends forward from the hips in the right way, kitchen tables, ironing boards, sinks and wash-tub stands should be made considerably higher than they usually are. The height of a common dining table is too low for most women and causes them to almost unavoidably sin against their health. Tables should be made to fit the women who work at them, not the woman be obliged to fit her height to the table. For the woman of average height, which is 5 feet 4 inches, a work table should be 31 inches high. It is better for a short woman to reach somewhat upward than for a tall woman to stoop.

Sweeping is an exercise which most women find arduous, mainly on account of two things: the excessive force applied to the broom and the bad position assumed by the sweeper.

If they will stand erect, with head and chest up, using the broom with a drawing instead of a pushing motion, making it steady as possible and with the least muscular effort, they will find a difference.

In the effort to pick up an object from the floor the average woman will keep the limbs rigid, bend the body like a closing jack-knife and reach stiffly for the object. This means strain for every muscle in the body and waste of energy. Stand very close to the object, bend the knees and sink downward. Thus the object is reached easily, quickly, gracefully and the back is not strained.

"A penny saved is a penny earned" in physical as well as commercial life. Many pennies of nervous energy can be saved in a day's work by using only the muscles necessary to accomplish the task.

Direct your four sturdy servants to lift, to carry, to wash, to scrub, to walk, to stoop, to mount stairs, to sweep, to write, to sew. Command them in every way possible to save the delicate and more essential muscles of the trunk from labor unfitted for them. Let your arms lift a chair, not the muscles of the whole body.

Women who have formed the habit of standing in a bent, back-burdened position exaggerate it when they walk, especially if there is a sense of "hurry" in the brain. Can you not recall some neighbor, hurrying, in a soft of a dog-trot gait, about her work with body bent far forward, with head and shoulders quite in advance of the rest of the body, as if the

body could not or would not go fast enough for the impatient brain? This is the "haste that makes waste" and brings heaviness of spirit and oldness of body. It shows that woman is not master of her work, but that her work masters and drives her.

There is an Arab proverb which well says that "Hurry is the devil." Worry is worse. Let us keep serene and free from the malign influence of his Satanic majesty. Calmly wait until we reach the bridge before we cross and trust a higher hand to lead us through our difficulties.

It is in the actual movements themselves, the constant succession of liftings, bendings, reachings, and so on, that make up housekeeping, that the valuable physical training lies. To make them wrong means that work is drudgery. To make them right means not only that housework itself becomes easy and interesting, but in a short time every other movement made will be done in the same easy manner.

It is but natural to expend all of one's energy in the duties of the house, and stop only when weariness compels it. The wise woman will not fail to take a few minutes for rest several times during her busiest and most taxing day. The very best way is to lie down for a while, even five minutes is much gain. Or, lose yourself a few minutes in a book; forget your work and duties in what you read.

To the woman who considers her duty to her family the main point, these suggestions doubtless seem nonsense. Nevertheless, it is body-saving, good, common sense. Duty to one's self should lead women to save the health and strength before the necessity to save it arises, while there yet remains a fund to draw from. The aging of the body is not a matter of years. It is rather a matter of condition, and the way one habitually uses the body largely determines what its ultimate condition will be. If to lie down when not sick, would be to brand oneself shiftless, try stretching the muscles in ways different from customary use. Stretch and relax alternately, for one or two minutes, take long, deep breaths often and yawn whenever you can.

A dejected physical attitude tends to develop a dejected mental state. On the other hand there is nothing more effective for ridding oneself of the blues, than to stretch the body to its full height, to breathe deeply and to express lightness and joy in bodily action. Recall some witty saying and laugh over it. "Laugh and the world laughs with you. Weep and you weep alone." Do you laugh enough? Sing a bit of some merry song, or go out and talk to the chickens, cows or horses. They are appreciative friends if you but think so. Don't forget all the things you loved before you married and "settled down." That settling down, physically and mentally, is perhaps the thing of all things to avoid.

We speak of persons bowed down with grief. Trouble of all sorts, if yielded to, does bow the body down, and a depressed mental state has an involuntary restrictive effect upon the vital processes. To be blue or sad is to have the breathing and circulation less than normal. The muscles relax, the chest sinks, the head droops and the feet drag.

Take yourself in hand and courage begins to replace despondency. When everything is topsy-turvy and your feelings are likewise criss-cross, instead of clouding the day with irritability, or grieving some one by an angry word or unkind tone, try a physical culture remedy. Stand perfectly still for a full minute. Breathe full and deep. Let go the tension in the muscles, loosen that hard-set jaw, smooth the forehead frown. "Let go" physically and the mental let go will follow.

Let us step lightly over the troubled days and try to find all the pleasures and poetry in our way. We home-makers must try to remember that there is poetry even in soapsuds and clothespins, for there is a poet who says,

"Her arms asplashing in the suds,
Her song a warbling free."

I don't know who wrote it, but it is quite enough to know that the laundry has been immortalized by at least one poet. Yes, and come to think of it, there's another who sang of the maid hanging clothes in the garden of the royal palace and the black-bird who took her nose for a ripe cherry.

Household work requires as much thought as any other occupation and thoughtlessness in doing the work occasions unnecessary labor. Often the housewife does not realize that strength can be lost. Nothing we can do will pay so large a dividend as good care of the body. How much are you investing in it?

Each woman has her own problem, and she needs to study conditions in her own household in order to determine what can be done to make her work easier. It is necessary for a woman to simplify in order to accomplish her work and to keep a bright lookout for the enjoyments and privileges of life.

Home making is a high art, and it is not necessary that a woman's health and happiness should be sacrificed in doing that which, to do well, is elevating and essential to the comfort and happiness of the human race.

Let us learn to save our strength before temporary weariness or permanent break-down necessitates it, and keep it for the emergencies of life, instead of using it unnecessarily in details when it is in abundance.

SOCIAL SIDE OF FARM LIFE.

MRS. CARROLL BRIDGES, ROCKPORT, IND.

[Read before the Spencer County Farmers' Institutes.]

In any discussion of the rights, the privileges and the pleasures of the people whose homes are in the country, probably no subject should have greater prominence than their attitude toward the social life of the community.

When we have asked the reasons why the farmer's family grows discontented and finally leaves the farm, the very first to be given and emphasized is the declaration that the social life is so barren and the opportunity for social pleasures so limited that farm life becomes unendurable. No doubt there is much truth in the statement and no doubt it is much easier for a certain class to move to town where they find their entertainment "ready made" than to exert themselves to be neighborly.

Let us notice the existing conditions which prevent social activity on the farm.

First, the isolation of the farm life if not controlled and guided fosters a sort of spirit of intolerance which will prevent a deep social life. If we are not in touch with our neighbor we do not care about his progress. We are not interested in his plans. A difference of opinion in religion or politics widens the gulf and it seems that in such cases small differences of opinion, in some unaccountable way, have greater power to keep people apart than have large mutual interests to bring them together, but in the country the mutual interests must be great. In this day of good roads, the telephone, rural mail delivery and later the electric railway, we are not isolated but are brought closer together and the neighborhood is afforded opportunities for an enlarged social life.

That farmers have mutual interests is shown by the unbounded success of these institutes. "Friction of minds sharpens intellect" and the exchange of plans and ideas, discussion of theories and practical demonstrations have promoted the general welfare and has also done much to brush aside the antagonism and petty jealousy between town and country. It has been said that society is no comfort to one not sociable, so if we are so absorbed in crop rotation and market reports as to forget that we have neighbors we lose much of life's pleasures.

Mrs. Meredith says: "Social activity, social pleasures the world over, when of the higher order are under the patronage of women," so it is the women of the farm home who must take the initiative in planning and carrying out social affairs and to whom we must look for a social awakening of the neighborhood. As homemakers the women of the country do

not always rise to the level of their opportunities in a social way. We are too easily discouraged by the criticism such a movement would call forth from those not socially inclined. And again we fail to realize that the family life should be the type of a high social life and that all social interest in neighborhood affairs must center there.

The most successful method of furthering social interest in the country seems to be the organization of clubs. It matters not what may be the declared purpose of the club so it includes a higher degree of culture, a broader outlook and a feeling of good will toward our fellow workers. If that word "club" sounds to the men like cold dinners and neglected homes, call it something else, but appoint officers, a definite time of meeting, or you can never get the members together.

In the meetings compare means and methods and discuss perplexing home problems as well as the latest books and magazine articles. Take advantage of the state circulating library if possible and it will repay many times the small sum invested. Sometimes it will seem almost impossible to find time to attend the meetings, but remember those people who work all the time do not accomplish as much as others who judiciously plan their work for some recreation and take it up again with better spirits. You will find that an afternoon spent in this way combines a round of visits with your neighbors for which you would perhaps not find time in a whole year.

When a women's club has succeeded in bringing in the younger women, the daughters and later the men it has justified its existence, for no social conditions are sane unless ample provision is made for the enjoyment of the young people, and if there is no other way to get the men to go, promise them something to eat. Encourage the young people to form a literary society, but remember it is not best to encourage only those occasions which are instructive but also provide for good times and fun—pure and unadulterated. Guide and guard their recreations, make their homes attractive and hospitable, a place where friends are always welcome, provide good literature, and the boys and girls will not turn from the farm home to the glaring diversions of the city. I wish to speak briefly of the attempts toward social organization in our own community. The Country Club has been in existence about four years and you are more or less familiar with the organization, but to its members and their friends it has been a great success socially. The members are subscribers to the State circulating library and derive great benefit from a supply of literature for the winter. But there is another club in our community known as the "Social Circle." It was organized about a year ago with eighteen charter members, a president, secretary and treasurer.

The meetings are held weekly except during the busy season. A literary program is provided, a question box is provided and discussed, the hostess provides sewing for the guests and serves light refreshments. Oc-

asionally the members give entertainments of various kinds and each one is privileged to invite friends. The men are included in these entertainments, and withal the society has proved an important factor in uniting and uplifting the neighborhood. These are only examples of what might be done and yet attend faithfully to household duties.

The lives of farm women must necessarily be many-sided, but we must not become exclusively domestic else we become commonplace. Do not grow only in a single direction, but be a "friend of your friends, a housekeeper and a member of society." In a spirit of good fellowship let us be more sociable. Get acquainted, strengthen personal friendships, gain other friends and make the farm life ideal, as it should be, for—

"Life is the mirror of king and slave,
'Tis just what you are and do,
Give to the world the best that you have
And the best will come back to you."

AGRICULTURAL EDUCATION.

EARLE C. SALISBURY, ORLAND, IND.

[Read before the Steuben County Farmers' Institute.]

I believe all present appreciate the value of an education. To you who are skeptical upon the point, I need but point you to the great men of our country, men who really serve their fellow men, and not those who amass fortunes by niggardliness. How many of our presidents were not graduates of colleges? How many of the Senators or Cabinet officers are not trained men? Very few indeed, and then when you come to consider what a small proportion are educated then you will realize how many more chances a college man has for positions of trust and honor. A book entitled "Who's Who in America" gives an exhaustive treatise of the value of education, the editors of which induced ten thousand of noted men in every line of reputable endeavor to report their education. They didn't find an uneducated man and only twenty-four were self-taught. A boy with a common school education had in round numbers one chance in nine thousand to become noted; one with a high school education had one chance in four hundred, while one with a college training had one chance in forty.

How do these people get their education, their training? It is gotten by learning facts and the relation which they bear to each other, whether they be that of the dead languages, mathematics, nature study or the details of some trade or profession. Since it is the learning of facts that produces this effect, why can not useful facts give the desired effect as well as the impractical, uninteresting stuff which is taught in

so many of our institutions of higher learning as well as the grades. For instance, I was taught when in the grades how to parse and diagram and many other things which I have had no occasion to use since that time. The same way in the high school. Had I been taught some of the interesting things of nature, things I could see and handle, I would have taken much more interest in them and in my school work. Had I been taught that the ground mole is an immense destroyer of insects, therefore a friend of the farmer, I would not have killed any. I used to wonder how it was that a snake could swallow a frog when the body of the victim was twice as large as that of the victor. When I was taught in college that the jaw of the reptile is attached to the skull by means of an elastic cord I could understand how he got that frog down his throat. I used to marvel at the snake charmers in the side shows at the county fair. It's all simple now, as snakes never bite, they strike. As long as they are not coiled they are harmless. Had I known that I might have found Mr. Streaked Snake a congenial companion in place of a deadly enemy.

One of the greatest objects of education is to train the seeing eye. That is an eye which pierces to the depth of things, an eye which can see beauty in every object in nature and a mind which understands the "why" of the different actions of man and nature. How many of our college graduates know that insects breathe through pores in the sides of their bodies? And yet they will go back to ancient Greece and Rome and find something to study about. He doesn't care whether it is lace-winged or scale-winged, whether it feeds upon fruit or upon weeds. He thinks he is doing mankind a great service by deciphering hieroglyphics which treat of events which happened centuries ago. I appeal to you, are not the things which God has made more interesting and more elevating than that which insignificant man has made? Then let us have more nature study and less of that which trains for training's sake. There is another reason why we should have nature study. It will help to stop the emigration from farm to village, from village to town, from town to city. A few statistics from Wright's Sociology show the cityward tendency in the United States. In 1790, 3.35 per cent. of the total population lived in cities of 8,000 or more; in 1850, 12.49 per cent.; in 1880, 22.57 per cent., and in 1900, 33.1 per cent. This transplantation has far-reaching results. Politically it gives the cities the predominance and increases the urgency of municipal laws. There are many times more laws on our statute books to protect city citizens than country citizens. They are needed more where people have less respect for the rights of others. Socially it increases the number of classes most exposed to agitation and discontent, intensifies the danger of social upheaval and widens the chasm between the two classes. It tends to bring the wealth of the nation into fewer hands and react profoundly upon the material as well as the social and political life of the nation.

It is strange that large numbers of people will leave the country where homes are cheap, air pure, all men equal and extreme poverty unknown, and crowd into cities where the reverse is true, where smoke and dirt and sin shorten life and cause the race to lose its vitality. It has been said that "there is no such thing as the fourth and fifth generation in the city," so that fresh blood must be supplied from the country and small towns to fill the places of those who can not keep up in the maddening race for wealth and position. Viewing the movement from the standpoint of a student of sociology and not of the individual we realize that the movement will only add to the trouble of the municipal governments which are already almost breaking down with corruption and inefficiency. He knows that crime is increasing in the cities and that the massing of dense population means impaired public health and morals. The constant depopulation of the smaller towns and country by steadily drawing away the best can not help lowering the tone of village and farm life. It prevents to a great measure the improvement of educational methods and tends to exclude the people of the country from those cultural influences of modern life which ought to be common to all. Viewing the city from the standpoint of the individual, we see that it offers better social opportunities. Undeniably the city has superior attractions for the well-to-do. Even the poorest classes seem to find in the noises, the excitements, the crowds, and even the filthy tenements, a charm that makes them remain when they know that better conditions are to be found in the country. The city offers greater opportunity for promotion.

Our schools and school teachers has been looking not towards the farm but away from it. Is it anyone's fault? No; it is everybody's fault. Through education our young men will be brought to see the dignity, the beauty, the profit and the honor of farming. It presents vast problems worthy of the mettle of any young man. When every other art and science shall have been worked out to their utmost limit, the science and practice of agriculture will present boundless unexplored fields for work and research. The idea that anybody can farm who has the brawn has been drilled into them until they completely overlook the wonderful opportunities that agriculture presents. The very magnitude of the problems yet to be solved cause them to fail to see them. Their eyes are too close to the picture. The successful farmer must be a business man of no mean order. Very few occupations require a broader knowledge. He deals not only with men but also with animals and plants and machines, so that he must know something of botany, zoölogy, chemistry, physics, bacteriology, veterinary, medicine and mechanics. The farmer must be an accurate observer and have plenty of room for the exercise of keen judgment. He can not hope to become immensely wealthy, but by careful management he can secure riches enough to minister to the needs of the ideal family life.

Our young men too often look upon the distasteful features of country life as things which can not be helped, which is a false conception, as much of the isolation and monotony have been already overcome by the telephone, the rural delivery of mail and the organization of the farmers into associations such as the Institutes and the Grange.

Agriculture will never be taught in the rural schools till they are centralized. One teacher can not possibly teach more than twenty-five or thirty classes, as is the case in the country schools today. City school children have drawing, music, needlework and nature study, while the country children do not and never will till their schools are larger. Therefore the immediate problem before us is to centralize our schools. It will also enable us to employ more efficient teachers, the attendance will be more regular, the health of the pupils better and they will do better work, as there is enthusiasm in numbers.

Young farmer, don't think that you don't need an education for your calling. You know the standing of an uneducated doctor; we call him a "quack." In all other callings the well educated man leads. And why do the farmers feel satisfied with a common school or high school education? The late Mr. Mahan said, "It is because they can make a living so easily that they haven't felt the need of it." There is much truth in that statement, despite the conception among many farmers that living in town is like living in a bed of roses. Ninety-seven per cent. of the so-called business men fail; only 3 per cent. succeed. I tell you, my friends, if the farmer would put one-half the study and application to his business that every successful city business man does the howl that "farming doesn't pay" would become a whisper. How many farmers can balance a ration? If you ask him about protein or potash, likely as not he will begin to talk about habeas corpus or use a technical term of some other business. Things well enough for him to know, but not essential to him in his business. How many farmers keep accounts so that they know where every penny comes from and where it goes? They know they make money, but they don't know except in a general way where it comes from or where the leaks are. What does it cost to produce a pound of pork? a bushel of corn? a pound of butter? How many pounds of pork can be made from a bushel of corn? There is a farm in New York State which can not supply the demand for butter at \$1 per pound. During a three months' stay at the great fair at St. Louis, I met a young man who owns an 80-acre farm within the limits of New York City who pays a tax of \$30 per acre. He pays what we would call an exorbitant price for labor, and yet cleared something like \$70 per acre this last year.

The educated farmer profits by the experience of others. He doesn't have to learn everything by experience and thus he can begin life several years in advance of his uneducated brother. He appreciates and knows how to utilize the information which can be obtained from the agricultural experiment stations. To the country boy who thinks he doesn't want to

live on the farm, I would suggest that he take the agricultural course anyway. The department of agriculture at Washington can not secure enough trained men to carry on its work. President Stone of Purdue University at an open meeting of the Grange at that place showed twenty applications from the civil service which had come to his desk within two weeks for positions which could only be filled by graduates of agricultural schools. Five of the twenty positions had a salary of less than \$1,000 per year the first year and three above \$2,000, one of which was \$2,500 and the others intermediate. Each of these salaries is increased liberally during the first few years. The officials of the department complain that they can not keep their help as private concerns come along and offer still higher pay.

There is a growing demand for teachers who can teach agriculture not only in colleges but in the high schools. Agricultural high schools are being founded and there are very few who are capable of taking charge of them. In Wisconsin, which possibly has the lead in this line, they require a teacher to be a bachelor of science in agriculture, to have lived on the farm and to have had previous experience in teaching. Teachers having these qualifications are rare and their salary is proportionally high. Last fall seven or eight young men who had taken engineering work at Purdue for a year changed their course to take agriculture. Others would have followed their example had they had any encouragement from home. In fact several said their parents would not furnish them money to study agriculture (they could learn that at home), so that in order to get an education they took something else.

Of our class of nine which graduated last spring from the agricultural department, two have gone to New York State, one as manager of a four-hundred acre farm with twelve men under him, the other to run a creamery in connection with the same farm with six helpers; one a chemist in his father's fertilizer works in Indianapolis; one has gone to Oklahoma to run a refrigerator plant, the only one who is not engaged in strictly agricultural pursuits; another who prepared himself for the agricultural press, is now editor of the Orange Judd Farmer. This fellow took a business course at Vories' business college at Indianapolis because his parents objected to his studying agriculture, like many another fond but mistaken parent which he wanted to do in the first place. He stayed with this for some time, even though he didn't like it, but was successful as success goes. He took the short course at Purdue and then came back for the four years' course. He was editor of the college paper last year. After graduation he began to work for the experiment station with Dr. Arthur on rusts. October 1 he resigned to take a position with the Phelps Publishing Company at Springfield, Mass. He came to the International Live Stock Show at Chicago to report the show. The chief editor of the Orange Judd Farmer, which is published by the same company, was taken ill and my class mate was put in. The remaining four

of us have returned to our home farms better farmers by far than we could possibly have been otherwise. Our circle of influence may not be as wide as of those who are more conspicuously before the public but we are striving to improve the condition of our fellow farmer. We are glad to be of service to him, but don't expect too much of us. Nature has bestowed gifts upon some to such an extent that they without any education are better farmers than others who have B. S. in agriculture attached to their names.

I will end with a quotation from Prof. W. A. Stevenson of Iowa. "A new agriculture is dawning, an agriculture with more numerous and complex problems, an agriculture which demands that hand work must be combined with the head work, an agriculture which will not give a fruitful return to the man who only knows how to plow, harrow, reap, and sow, but an agriculture which will abundantly bless the one who brings to his assistance every resource of a fertile brain as well as a skilled hand."

BUREAU OF STATISTICS.

(Published by permission of Hon. Joseph H. Stubbs, Chief.)

Indianapolis, Ind., July 15, 1905.

The following facts have been compiled from reports made to this Bureau by Township Assessors for the year ended April 1, 1905.

There are 1,016 of these officers and every one has made his report.

These facts are given for the whole State under the following heads:

GRAIN AND HAY.

Wheat sowed in 1904.....	(acres)	1,644,934
Corn planted and to be planted in 1905.....	(acres)	4,018,432
Oats sowed and to be sowed in 1905.....	(acres)	1,981,476
Timothy meadow in 1905.....	(acres)	1,422,875
Clover meadow in 1905.....	(acres)	1,040,336
Clover seed in 1904.....	(bushels)	333,811

VEGETABLES.

Potatoes planted and to be planted in 1905.....	(acres)	66,885
Tomatoes planted and to be planted in 1905.....	(acres)	15,227
Peas planted and to be planted in 1905.....	(acres)	12,213
Watermelons planted and to be planted in 1905.....	(acres)	8,232
Cantaloupes planted and to be planted in 1905.....	(acres)	2,916
Tobacco planted and to be planted in 1905.....	(acres)	13,972

LIVE STOCK.

Horses on hand April 1, 1905.....	596,156
Horses sold past year.....	81,916
Mules on hand April 1, 1905.....	60,150
Mules sold past year.....	23,044
Dairy cattle on hand April 1, 1905.....	562,412
Beef cattle on hand April 1, 1905.....	395,168
Beef cattle sold past year.....	431,786
Hogs over three months old on hand April 1, 1905.....	1,834,125
Hogs sold past year.....	2,612,480
Hogs died of disease past year.....	275,774
Sheep on hand April 1, 1905.....	596,156
Sheep sold past year.....	440,296
Sheep died of disease past year.....	36,631
Wool-clip for 1904.....(pounds)	3,245,412

BUTTER AND CHEESE.

Butter made past year.....(pounds)	36,903,795
Cheese made past year.....(pounds)	1,066,875

POULTRY.

Poultry of all kinds raised past year.....(dozen)	1,534,860
Eggs of all kinds produced last year.....(dozen)	61,572,937

FRUIT TREES IN BEARING.

Apple trees.....(number)	4,222,078
Pear trees.....(number)	635,801
Plum trees.....(number)	671,449
Peach trees.....(number)	1,569,688
Cherry trees.....(number)	672,971
All other fruit trees.....(number)	532,883
Small fruits.....(acres)	7,464

COMPARISONS AND DISCUSSIONS OF THESE REPORTS MADE
APRIL 1, 1905.

CORN.

Corn is the leading crop in Indiana and its acreage varies but little from year to year. For the last ten years the acreage and average yield per acre has been as follows:

<i>Year.</i>	<i>Acreage.</i>	<i>Average Yield.</i>
1896.....	4,005,690	37.09 bushels
1897.....	4,101,665	30.35 bushels
1898.....	3,915,131	38.08 bushels

<i>Year.</i>	<i>Acreage.</i>	<i>Average Yield.</i>
1899.....	3,837,959	39.04 bushels
1900.....	4,005,766	42.41 bushels
1901.....	4,385,447	23.00 bushels
1902.....	4,282,317	42.12 bushels
1903.....	4,008,968	35.68 bushels
1904.....	4,015,179	33.07 bushels
1905.....	4,018,432	

The ten leading counties for acreage for 1905, are:

Benton	99,540 acres
Tippecanoe	92,538 acres
Knox	85,568 acres
Montgomery	79,597 acres
Clinton	74,327 acres
Boone	71,666 acres
Warren	69,672 acres
Jasper	67,423 acres
Randolph	66,979 acres
Gibson	65,327 acres

OATS.

The acreage of oats in 1905 is the largest in the history of the State.

For comparison, a table showing the acreage and yield for the past ten years is given below:

<i>Year.</i>	<i>Acreage.</i>	<i>Average Yield.</i>
1896.....	1,180,057	20.07 bushels
1897.....	1,208,269	29.44 bushels
1898.....	1,162,451	28.71 bushels
1899.....	999,100	36.82 bushels
1900.....	1,485,604	34.38 bushels
1901.....	1,499,980	27.96 bushels
1902.....	1,488,037	36.65 bushels
1903.....	1,428,381	25.71 bushels
1904.....	1,621,114	30.72 bushels
1905.....	1,981,476	

The leading ten counties for 1905 in acreage are:

Benton	82,392 acres
Tippecanoe	58,569 acres
White	56,985 acres
Clinton	50,718 acres
Warren	50,577 acres
Newton	50,092 acres
Montgomery	49,774 acres
Jasper	48,576 acres
Allen	46,979 acres
Randolph	42,794 acres

WHEAT.

The wheat acreage for 1905 is 30 per cent. above that of 1901. That for 1905 is 1,644,934 acres, an increase of 382,741 acres over that of 1904.

It will be observed from the following table that the acreage for 1904 was the smallest in ten years:

<i>Year.</i>	<i>Acreage.</i>	<i>Yield.</i>
1896.....	2,862,236	8.58 bushels
1897.....	2,479,077	15.23 bushels
1898.....	3,012,332	16.93 bushels
1899.....	3,039,933	10.30 bushels
1900.....	2,674,918	2.93 bushels
1901.....	2,170,339	15.37 bushels
1902.....	2,613,275	16.97 bushels
1903.....	2,308,510	12.00 bushels
1904.....	1,262,193	10.59 bushels
1905.....	1,644,934	

The average acreage of wheat for the past ten years is 2,406,474 acres, and the average yield per acre 12.3 bushels.

The leading ten counties in wheat acreage for 1905 are:

Posey	74,562 acres
Gibson	64,803 acres
Knox	50,125 acres
Ripley	49,880 acres
Dubois	42,959 acres
Harrison	42,212 acres
Shelby	40,806 acres
Spencer	39,857 acres
Bartholomew	39,217 acres
Rush	37,483 acres

TIMOTHY MEADOW.

The following table gives the acreage and yield of timothy for the ten years last past:

<i>Year.</i>	<i>Acreage.</i>	<i>Yield.</i>
1896.....	1,243,969	1.32 tons
1897.....	1,150,586	1.48 tons
1898.....	1,175,390	1.56 tons
1899.....	1,123,903	1.27 tons
1900.....	1,146,163	1.41 tons
1901.....	1,234,899	1.40 tons
1902.....	1,012,191	1.60 tons
1903.....	1,125,404	1.26 tons
1904.....	1,334,978	1.40 tons
1905.....	1,422,875	

The ten counties leading in acreage for 1905 are:

Ripley	48,349 acres
Allen	43,784 acres
Monroe	37,863 acres
Lake	33,093 acres
Greene	32,226 acres
Clay	30,879 acres
Porter	27,148 acres
Boone	26,144 acres
Owen	25,380 acres
Montgomery	25,191 acres

CLOVER MEADOW.

The acreage of this crop shows a great variation in the last ten years. The following table will give the acreage and the yield by years for this period:

<i>Year.</i>	<i>Acreage.</i>	<i>Yield.</i>
1896.....	713,555	1.32 tons
1897.....	1,007,831	1.34 tons
1898.....	1,805,579	1.48 tons
1899.....	1,240,988	1.60 tons
1900.....	897,715	1.56 tons
1901.....	1,012,191	1.60 tons
1902.....	809,918	1.65 tons
1903.....	1,080,636	1.64 tons
1904.....	918,562	1.48 tons
1905.....	1,040,336	

The ten leading counties in acreage of clover for 1905 are:

Randolph	25,074 acres
Clinton	25,011 acres
Allen	24,420 acres
Jay	22,293 acres
Boone	21,537 acres
Johnson	21,350 acres
Wayne	21,281 acres
Rush	20,827 acres
Shelby	20,091 acres
Montgomery	19,882 acres

The crop of clover seed in 1904 was 333,811 bushels, the following ten counties leading:

Dubois	13,506 bushels
Shelby	13,110 bushels
Johnson	11,359 bushels

Rush	10,599 bushels
Hancock	10,546 bushels
Hamilton	10,208 bushels
Clinton	10,166 bushels
Spencer	9,649 bushels
Bartholomew	9,349 bushels
Howard	9,166 bushels

POTATOES.

The acreage of potatoes has declined during the last ten years until the present crop is but little over two-thirds of what it was in 1895.

The following table gives the acreage and yield by years since 1896:

<i>Year.</i>	<i>Acreage.</i>	<i>Yield.</i>
1896.....	91,502	64 bushels
1897.....	92,742	42 bushels
1898.....	66,205	71 bushels
1899.....	68,561	79 bushels
1900.....	69,768	87 bushels
1901.....	65,673	28 bushels
1902.....	73,227	95 bushels
1903.....	77,153	68 bushels
1904.....	60,657	86 bushels
1905.....	66,885	

TOMATOES AND PEAS.

The large acreage of these crops—15,297 of the former and 12,213 of the latter—makes 1905 the banner year for these products. Scott County with 1,828 acres in tomatoes leads the counties of the State, and Knox, with 2,026 in peas, stands first in that particular.

WATERMELONS AND CANTALOUPEES.

The acreage of watermelons for 1905 is 8,232, and for cantaloupes 2,916 acres. Both these fall below the acreage of 1904. Knox County leads in both these crops with 2,035 acres of the former and 941 acres of the latter.

TOBACCO.

The tobacco crop of 1905 is more than 60 per cent. in excess of that of 1904 in acres planted. That of 1905 is 13,972. There are 65 counties reporting this crop, a larger number than ever before.

The leading counties are:

Switzerland	2,332 acres
Jefferson	2,308 acres
Spencer	2,201 acres

Vigo	2,181 acres
Warrick	1,770 acres
Dearborn	750 acres
Ohio	635 acres
Clark	350 acres
Randolph	269 acres
Scott	119 acres

LIVE STOCK.

A ten-year comparison of horses, mules and cattle on hand April 1 for 1905, are:

Year.	Horses.	Mules.	Cattle	
			Dairy.	Beef.
1896.....	692,917	60,075	486,096	468,043
1897.....	664,331	56,443	472,553	498,488
1898.....	614,303	48,956	497,762	587,832
1899.....	601,812	46,118	492,680	665,478
1900.....	586,524	45,621	510,378	695,219
1901.....	622,872	49,521	543,048	792,966
1902.....	634,860	57,233	547,590	753,871
1903.....	615,389	53,763	541,753	784,265
1904.....	625,422	55,753	558,581	740,977
1905.....	596,156	60,150	562,412	395,168

Reports of live stock sold have been made for but three years, and they are given for horses, mules and cattle in the following table:

Year.	Horses Sold	Mules Sold	Cattle Sold.
	During Year.	During Year.	
1903.....	81,073	17,186	449,577
1904.....	82,519	18,023	466,706
1905.....	81,916	23,044	481,786

A comparative table for the past ten years, giving the number of hogs and sheep on hand April 1, of each year, the number of each dying from disease, and the wool-clip is given herewith.

Year.	Hogs		Sheep		Wool Clip.
	On Hand.	Died.	On Hand.	Died.	
1896.....	1,472,332	581,260	741,743	45,308	4,075,275
1897.....	1,411,949	899,457	683,814	74,998	3,687,547
1898.....	1,887,384	372,868	747,878	52,588	3,582,812
1899.....	1,756,476	553,930	861,024	55,284	4,631,477
1900.....	1,824,653	282,550	832,856	58,437	4,537,975
1901.....	1,685,672	236,870	874,541	83,754	4,545,150
1902.....	1,729,473	197,491	752,529	51,737	4,186,274
1903.....	1,581,366	295,726	600,609	58,391	3,381,044
1904.....	1,764,291	349,610	589,201	42,592	3,561,255
1905.....	1,834,125	275,774	509,565	36,631	3,245,412

The number of hogs and sheep sold for the last three years is given below:

<i>Year.</i>	<i>Hogs Sold During Year.</i>	<i>Sheep Sold During Year</i>
1903.....	2,400,646	459,633
1904.....	2,550,616	400,522
1905.....	2,612,480	440,296

The ten counties reporting the largest number of horses on hand April 1, 1905, are:

Marion	17,583	Randolph	9,826
Allen	11,300	Madison	9,783
Montgomery	10,731	Clinton	9,727
Boone	10,406	St. Joseph	9,288
Delaware	10,140	Shelby	9,270

Those leading in mules on hand are:

Posey	2,897	Vanderburgh	2,057
Knox	2,482	Bartholomew	1,787
Gibson	2,431	Parke	1,596
Jackson	2,338	Warrick	1,591
Benton	2,110	Daviess	1,430

The counties leading in horses sold the past year are:

Howard	2,163	Hamilton	1,598
Montgomery	2,056	Parke	1,596
Elkhart	1,926	Randolph	1,595
Adams	1,803	Shelby	1,562
Boone	1,682	Warren	1,503

Those leading in mules sold the past year are:

Putnam	1,369	Jackson	611
Decatur	1,122	Greene	568
Montgomery	1,043	Daviess	555
Posey	818	Parke	538
Gibson	362	Sullivan	534

The leading counties in dairy cattle on hand April 1, 1905, are:

Allen	14,557	Elkhart	9,858
Lake	12,690	Laporte	9,747
Porter	12,254	Boone	8,863
Ripley	11,986	Delaware	8,843
St. Joseph	10,191	Marion	8,841

Those leading in beef cattle on hand April 1, 1905, are:

Shelby	11,152	Jasper	8,420
Putnam	10,552	Boone	8,284
Greene	9,564	Parke	7,294
Hendricks	9,478	Kosciusko	6,632
Wabash	9,315	Hamilton	6,615

The counties leading in beef cattle sold the past year are:

Hendricks	12,788	Jasper	9,703
Grant	10,582	Boone	9,654
Putnam	10,012	Porter	9,393
Clinton	9,993	Kosciusko	8,396
Rush	9,884	Randolph	8,219

The counties showing the largest number of hogs on hand April 1, 1905, are:

Clinton	48,846	Hamilton	40,358
Hendricks	42,028	Henry	39,561
Boone	46,926	Delaware	37,681
Montgomery	45,864	Randolph	36,315
Rush	43,921	Carroll	29,789

Those leading in hogs sold the past year are:

Henry	72,556	Montgomery	63,135
Boone	69,564	Wayne	56,451
Clinton	68,991	Delaware	56,356
Rush	68,767	Jay	55,990
Hamilton	68,069	Randolph	55,839

The leading counties in sheep on hand April 1, 1905, are:

Lagrange	26,837	Allen	14,571
Steuben	25,624	Montgomery	12,181
Dekalb	17,153	Marshall	11,220
Noble	16,798	Elkhart	10,855
Grant	16,017		

Those leading in sheep sold the past year are:

Lagrange	28,973	Dekalb	14,606
Steuben	26,524	Marshall	10,825
Noble	17,755	Montgomery	10,669
Sullivan	16,852	Greene	9,737
Kosciusko	16,425	Allen	9,572

The leading counties in the wool-clip for 1904 are:

Steuben	202,106	Kosciusko	90,625
Noble	138,666	Allen	85,926
Lagrange	123,385	Jay	82,339
Dekalb	118,726	Montgomery	77,114
Cass	107,399	Elkhart	72,641

BUTTER AND CHEESE.

The comparative table below will be found interesting:

<i>Year.</i>	<i>Pounds of Butter.</i>	<i>Pounds of Cheese.</i>
1896.....	35,200,916	394,645
1897.....	34,112,817	412,148
1898.....	35,953,710	1,279,349
1899.....	31,905,140	1,083,403
1900.....	30,509,014	791,660
1901.....	34,639,017	241,339
1902.....	34,755,464	762,731
1903.....	33,122,182	630,488
1904.....	34,956,788	622,364
1905.....	36,903,795	1,066,876

The counties leading in the production of butter the past year are:

Allen	1,167,792 pounds
Ripley	880,803 pounds
Delaware	816,691 pounds
Elkhart	728,568 pounds
Lagrange	691,000 pounds
Huntington	666,682 pounds
Boone	618,861 pounds
Grant	603,176 pounds
Hamilton	601,689 pounds
Kosciusko	601,549 pounds

Those leading in cheese are:

Vigo	201,366 pounds
Ripley	199,717 pounds
Delaware	156,955 pounds
Allen	102,951 pounds
Miami	95,168 pounds
Adams	72,903 pounds
Jackson	55,072 pounds
Wayne	48,895 pounds
Hendricks	26,865 pounds
Wells	23,398 pounds

POULTRY AND EGGS.

There were produced 1,534,860 dozens of poultry and 61,572,937 dozens of eggs the past year. Estimating the poultry at five dollars a dozen we have \$7,698,617 as the value of the poultry alone. If we place the price of eggs at 12½ cents a dozen, we have \$7,673,300, or both combined, \$15,371,917 as the value of the poultry products of the State for one year.

A ten-year comparative table of the poultry products of the State follows:

<i>Year.</i>	<i>Poultry, Dozen.</i>	<i>Eggs, Dozen.</i>
1896.....	952,877	30,860,797
1897.....	1,012,142	31,172,618
1898.....	1,455,181	34,992,097
1899.....	1,241,702	39,069,760
1900.....	1,345,286	38,987,348
1901.....	1,436,131	46,363,259
1902.....	1,114,807	47,203,311
1903.....	1,071,630	49,582,129
1904.....	1,148,957	51,034,086
1905.....	1,534,860	61,572,937

The counties leading in poultry the past year are:

Ripley	50,683 dozen
Randolph	48,650 dozen
Decatur	43,386 dozen
Hendricks	41,232 dozen
Lawrence	37,243 dozen
Boone	36,856 dozen
Marion	36,683 dozen
Hancock	36,353 dozen
Putnam	34,668 dozen
Shelby	30,820 dozen

Those in the production of eggs the past year are:

Noble	1,398,036 dozen
Morgan	1,029,097 dozen
Allen	1,006,768 dozen
Ripley	1,000,841 dozen
Jay	946,532 dozen
Kosciusko	866,761 dozen
Laporte	843,224 dozen
Putnam	826,551 dozen
Dekalb	815,415 dozen
Tiptecanoe	803,130 dozen

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